AS300 Upgrade Guide

IMPAX 6.2 or later to IMPAX 6.4

Upgrading the Components of an IMPAX 6.2 or 6.3 AS300 Cluster to IMPAX 6.4

AGFA

| see more | do more |

Copyright information

© Copyright 2009 Agfa HealthCare N.V., Septestraat 27, B-2640, Mortsel, Belgium. All rights reserved. No parts of this document may be reproduced, copied, translated, adapted, or transmitted in any form or by any means without prior written permission of Agfa HealthCare N.V.

Trademark credits

Agfa and the Agfa rhombus are trademarks or registered trademarks of Agfa-Gevaert N.V., Belgium or its affiliates. IMPAX, WEB1000, and TalkStation are trademarks or registered trademarks of Agfa HealthCare N.V. or its affiliates. All other trademarks are held by their respective owners and are used in an editorial fashion with no intention of infringement.

Documentation warranty statement

Characteristics of the products described in this publication can be changed at any time without notice.

The information contained in this document is subject to change without notice. Agfa HealthCare N.V. and its affiliates make no warranties or representations, express, implied, or statutory, with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

Agfa HealthCare N.V. and its affiliates shall under no circumstances be liable for any damage arising from the use or inability to use any information, apparatus, method, or process described in this document. Agfa HealthCare N.V. and its affiliates shall not be liable for errors contained herein or for incidental or consequential damage in connection with the furnishing, performance, or use of this manual.

The information in this publication is subject to change without notice.

2009 - 4 - 20

External software licenses

Information about third-party software licenses and copyrights can be found in *External software licenses* (refer to page 72).

Manufacturer's responsibility

The manufacturer, installer, or importer will be responsible for safety, reliability, and performance of the equipment only if:

- Installation, modifications, adjustments, changes, or repairs are performed by suitably qualified service personnel.

- The electrical installation of the site in which the equipment is used is according to an applicable safety standard (UL, CSA, or IEC/CDE).
- The equipment is used according to the instructions provided in the operation manuals.
- No software other than that which is distributed with this package or is sanctioned by Agfa will reside on the IMPAX 6.4 computers.

Additional documentation: Upgrades from IMPAX 6.2 or later

This guide is intended for service and administrative personnel who are upgrading an IMPAX 6.2 or 6.3 cluster to IMPAX 6.4. It is a companion volume to the *Pre-Migration Guide—IMPAX 6.2 or later to IMPAX 6.4*, which describes all tasks to be done leading up to the migration weekend. This upgrade and migration guide covers the tasks to be done during the migration weekend.

For information about using the IMPAX 6.4 software once it is installed, refer to the *IMPAX 6.4 Server Knowledge Base*, *IMPAX 6.4 Application Server Knowledge Base*, and *IMPAX 6.4 Client Knowledge Base*.

Contents

1 Preparing to upgrade 8

Valid IMPAX upgrade paths 8
Gathering information and equipment 9
IMPAX 6.2 or later upgrades: Necessary information and equipment 9
Running the Cross-Cluster Dictation Interlock tool 9
Taking a system snapshot 10
Stopping Connectivity Manager queues 10
Stop transmitting data to IMPAX 6.2 or 6.3 10
Archiving remaining unarchived studies 11
Verifying unverified studies 11
Storing unarchived studies 12
Closing and mirroring archive volumes 12
Emptying all queues 13
Halting the archive queue 13
Stopping antivirus software 13
Deleting old log files 14
Clearing the archive Logical Volume 14

2 Upgrading an existing AS300 Database Server to IMPAX 6.4 15

Upgrading Windows Server 2003 to Windows Server 2003 SP2 15
Upgrading to Internet Explorer 7 16
Upgrading the IMPAX database schema to IMPAX 6.4 16
Checking the upgrade status 17
Upgrading SQL Server database software 17
Upgrading SQL Server 2000 to SQL Server 2005 18
Stopping SQL Server services 20
Installing SQL Server 2005 SP2 20
Recording the names of previously installed IMPAX AS300 software packages 22
IMPAX packages found in the registry 22
Uninstalling the previous IMPAX software packages 23
Determining a password for the AgfaService account 23
32-bit AS300 installer packages reference 24
AS300 installer log files 26
Upgrading the IMPAX AS300 Database Server software 26

Generating the portable password file 29
Updating the SQL Server registration 30

3 Replacing an existing Database Server with a new station 31

Upgrading the IMPAX database schema to IMPAX 6.4 31
Checking the upgrade status 32
Backing up the AS300 SQL database 32
Restoring the upgraded database on a new Database Server 33
Generating the portable password file 34
Updating the SQL Server registration 34

4 Upgrading AS300 Network Gateway and Archive packages to IMPAX 6.4 35

Recording the names of previously installed IMPAX AS300 software packages 35
Uninstalling the previous IMPAX software packages 36
Configuring the ODBC connection to the SQL Database Server 36
Installing the IMPAX 6.4 AS300 Network Gateway and Archive Server packages 37
Installing and configuring Store and Remember archiving 40

5 Upgrading the other IMPAX 6.4 components 41

Upgrading the Application Server 41
Backing up the ADAM database 41
Uninstalling IMPAX documentation 42
Upgrading the ADAM database 43
Upgrading the IMPAX Application Server software to 6.4 43
Upgrading additional Application Servers in the cluster 44
Installing the IMPAX documentation 45
Running Healthcheck to check the status of web services 46
Configuring the Audit Record Repository database connection 47
Upgrading the Curator 47
Uninstalling the previous IMPAX software packages 47
Installing the Curator and CD Export server software 48
Disabling support for cc conflict jobs 49
Disabling tx object creation 50
Changing the SQL Server administrator (sa) password 51
Upgrading Clients to IMPAX 6.4 51
Uninstalling the IMPAX 6.2 or later Client software 51
Installing the IMPAX Client 52
Restarting antivirus software 54

6 Post-migration checking and stabilization 55

Testing the installed software 55
Restarting the archive queue 55
Restarting Connectivity Manager queues 56
Taking a post-migration system snapshot 56

Comparing pre- and post-migration snapshots 57
Synchronizing clocks on Windows-based IMPAX systems 57
Allowing time synchronization on a hardened IMPAX system 57
Synchronizing a Windows 2003 server to an external time source 58
Synchronizing a Windows 2003 server to an internal time source 59
Synchronizing with a time server when the IMPAX computer is not a member of a domain 59
Synchronizing with a time server when the IMPAX computer is a member of a domain 60
Installing the PSARMT and cache tools on a Windows server 60
Running PSARMT to mark studies as PACS archived 61
Detecting and correcting IMPAX cache corruption 61
Checking the integrity and identity of cache files against the IMPAX AS300 database 62
Finding files in a cache directory that are unknown to the database 62
Moving images from a cache directory 63
Generating a report of lost images 63
Uninstalling the IMPAX Migration Tools from a Windows computer 64
Uninstalling the Cross-Cluster Dictation Interlock tool 64

Appendix A: Troubleshooting IMPAX 66

Troubleshooting: IMPAX Client slow and erratic post-upgrade 66
Troubleshooting: Must back out of the Application Server upgrade 66
Troubleshooting: How do I determine which users are ADAM administrators? 67
Troubleshooting: How do I determine which ADAM instance is the Schema Master? 68

Appendix B: Cache check tools reference 69

mvf-check-cache 69
mvf-clean-cache 69
mvf-ddo-rescue 70
mvf-report-loss 70

Appendix C: External software licenses 72

Sonic Solutions 72
Monotype Imaging, Inc. End User License Agreement 72
The Apache Software License, Version 1.1 73
GNU General Public License 74
Sun Microsystems 79
Oracle Corporation 79
The ICC Software License, Version 0.1 79
Flexgrid for .NET 79
Log4Net 79
Zlib 79

Glossary 80

Index 84

Preparing to upgrade

1

Important!

Before proceeding with the upgrade of the AS300 server components, ensure that you have completed the pre-migration tasks outlined in the *Pre-Migration Guide—IMPAX 6.2 or later to IMPAX 6.4*.

You must perform certain preparatory tasks before upgrading to an IMPAX 6.4 AS300 configuration. These tasks include taking a system snapshot, stopping the transmission of data to the previous release of IMPAX, and halting and emptying queues.

1. Valid IMPAX upgrade paths

Sites can upgrade to IMPAX 6.4 from any of these versions of IMPAX:

- IMPAX 5.2.5 (including any SUs)—hereafter referred to as IMPAX 5.2
- IMPAX 5.3.1—hereafter referred to as IMPAX 5.3
- IMPAX 6.2.1—hereafter referred to as IMPAX 6.2
- IMPAX 6.3.1—hereafter referred to as IMPAX 6.3

AS3000 (Solaris) servers can upgrade to IMPAX 6.4 from any of these versions of IMPAX and Solaris:

- IMPAX 5.2 on Solaris 9
- IMPAX 5.3 on Solaris 9
- IMPAX 6.2 on Solaris 9 or 10
- IMPAX 6.3 on Solaris 9 or 10

Note:

If upgrading an IMPAX 5.2 or 5.3 AS3000 server on Solaris 10, contact the national or regional representative at Agfa HealthCare's Global Services for additional information and assistance.

A site running IMPAX 4.5 can migrate its user data—passwords, IDs, and most preferences—to IMPAX 6.4. However, database data cannot be upgraded directly from IMPAX 4.5 to IMPAX 6.4. The IMPAX 4.5 database must first be upgraded to IMPAX 5.2.5, then to IMPAX 6.4.

2. Gathering information and equipment

To perform the AS300 server upgrade and migration, gather the information and equipment needed for migrating and upgrading the stations.

IMPAX 6.2 or later upgrades: Necessary information and equipment

Equipment and information for upgrading existing IMPAX 6.2 or later stations	Notes
Whether Cross-Cluster Dictation is required, for synchronizing dictation status between IMPAX 6.2 or 6.3 and IMPAX 6.4	
Windows Server 2003 R2 Service Pack 2 software	
SQL Server 2005 SP2 software	
Which standard time server or source to synchronize the server clock against	
Whether using domain authentication	
Fully qualified domain name of the main Application Server	
Whether an Audit Record Repository is being added to the cluster	

3. Running the Cross-Cluster Dictation Interlock tool

Before it can be run, the Cross-Cluster Dictation Interlock tool must be installed and configured. Refer to "Installing the Cross-Cluster Dictation Interlock tool" in the appropriate version of the *IMPAX Pre-Migration Guide*.

The Cross-Cluster Dictation Interlock tool synchronizes the dictation status of studies between the previous version of IMPAX and IMPAX 6.4, when these are running in parallel—such as may happen when using a training server, when using a travelling server (AS3000 sites), or if planning to run the upgraded IMPAX cluster alongside the previous-version IMPAX cluster for a transition period.

To run the Cross-Cluster Dictation Interlock tool

1. On the 6.4 Application Server where the Relay service is running, open a command prompt.
2. Type the following command:

   net start StudyStatusRelayService

3. Exit the command prompt.

4. Taking a system snapshot

Before migrating to IMPAX 6.4, use the migration_inventory tool to capture the current state of the system for later comparison. Perform this task on any computer that has access to the AS300 database to be migrated and on which the Migration Tools have been installed.

To take a pre-migration system snapshot

1. At a command prompt, change to the directory containing the migration_inventory tool.
2. Type **migration_inventory -d** *database_name* **-U** *database_user_name* **-P** *database_password* **-s -D** *database_server_host_name*

   The output is stored in the migration_info table. It lists the number of IMPAX studies, total objects, and objects in cache. It also lists all IMPAX source stations and DICOM printers.
3. To create a report file with this information, type

   mig_reporter -t system_inventory_tool

   This command writes the output of the migration_inventory command to a report file in the C:\mvf-mig6\reports directory. For other parameters you can use with the mig_reporter.exe command, refer to the *IMPAX Pre-Migration Guide* appendix.

5. Stopping Connectivity Manager queues

If Connectivity Manager is currently deployed, launch its user interface, Service Tools. Service Tools consists of a series of Managers. The Queue Manager displays a list of devices that have queues and provides queue management functionality. Using the Queue Manager, you can stop or start a queue.

Before shutting down IMPAX for an upgrade, any *DM Out* or *impax_report_server* queues should be stopped. Messages in a queue that is stopped are not processed and sit in the queue until the queue is restarted.

To stop Connectivity Manager queues

1. In the Connectivity Manager Service Tools, click **Queue Manager**.
2. In the Queue List table, select the checkbox beside the queue of any system device or real world device with a *DM Out* or *impax_report_server* Component.
3. Click **stop**.

   The Status of the queue changes to Stopped.

6. Stop transmitting data to IMPAX 6.2 or 6.3

Allow remaining SEND jobs to continue until they have finished, then stop any more studies from being transmitting in the IMPAX 6.2 or 6.3 system.

To stop transmitting data to IMPAX 6.2 or 6.3

1. Open the Windows Administrative Tools and select **Services**.
2. Right-click the DICOM Service Class Provider service and select **Properties**.
3. To change the Service status, click **Stop**.
4. From the Startup type list, select **Disabled**.
5. To close the Properties dialog, click **OK**.
6. Launch the 6.2 or 6.3 Administration Tools and log in as user **service**.
7. On the Daily tab, select **Job Manager**.
8. Monitor each **Transmit** queue and wait for all outgoing jobs to finish.

   You cannot delete jobs in progress.
9. Select each Transmit queue and click **Halt Queue**.
10. To confirm that you want to halt the queue, click **Yes**.

7. Archiving remaining unarchived studies

Important!

This topic applies only to an Archive Server or to the Archive component of a single-host server (including standalone with archive and single-server configurations).

Before performing the upgrade, identify remaining unarchived studies. You must store these studies to the archive.

Verifying unverified studies

Before archiving studies, verify all unverified studies.

To verify unverified studies

1. In the 6.2 or 6.3 Administration Tools, on the Daily tab, click **Study Manager**.
2. From the location list, select **Failed Verification**.
3. Set other search criteria to **Any** value.
4. Click **Refresh**.
5. In the search results, select all studies.
6. To fix up the studies that have failed HIS verification, click **Fix All Studies**.
7. Review the results presented in the dialog.

Storing unarchived studies

When no studies are returned by the Failed verification query, archive all remaining studies.

To store unarchived studies

1. In the 6.2 or 6.3 Administration Tools, on the Daily tab, click **Study Manager**.
2. From the location list, select **Cached** (or another value that will return the unarchived studies).
3. Set other search criteria to **Any** value (or set to appropriate values).
4. Click **Refresh**.
5. In the search results, select the studies to archive.

   The Location column on the results list shows the current location of the study, and indicates which studies are only in cache (C for system cache, L for local station cache, W for web cache) and not also in an archive location (such as P for PACS archive).
6. Click **Store to Archive**.
7. To update the status of the selected studies, click **Refresh**.
8. Ensure that all studies are archived.

Note:

To store unarchived studies, you could also use the Migration Toolbox and run the study_archive_report tool. Refer to the “Running an initial report on study archiving status” topic in the *Pre-Migration Guide—IMPAX 6.2 or later to IMPAX 6.4*.

8. Closing and mirroring archive volumes

Close all open primary volumes before upgrading. Open mirror volumes are closed automatically when a SYNC job completes successfully with the corresponding closed primary volume. Fresh volumes may remain open as they do not contain any studies.

To close and mirror archive volumes

1. In the 6.2 or 6.3 Administration Tools, on the Setup tab, select **Archive Manager**.
2. Switch to the **Volumes** tab.
3. Select a logical volume and click **Close Logical Volume**.
4. If the system has a jukebox archive, you may have to wait for the sync job to finish.

   If the system has a non-jukebox archive, to ensure that a backup of the data exist, perform a mirror procedure manually.
5. On the Daily tab, select **Job Manager**.

6. Check the Delivery Date Time column for jobs that are not scheduled to run until later. If any exist, schedule these jobs to complete now, using the **Set Delivery Date and Time** option at the top.

9. Emptying all queues

Monitor the Job Manager to make sure that all the queues are empty and that all jobs are completed prior to migration.

To empty all queues

1. In the 6.2 or 6.3 Administration Tools, on the Daily tab, select **Job Manager**.
2. If an archive job remains in any of the queues, select the job and click **Expedite Selected Job(s)**.
3. If any other job remains in any of the queues, select the job and click **Delete selected job(s)**.

10. Halting the archive queue

When all archive jobs have been successfully handled, halt the Archive queue to stop any more studies from being archived until the upgrade is done.

To halt the archive queue

1. In the 6.2 or 6.3 Administration Tools, on the Daily tab, select **Job Manager**.
2. In the queue list, select the archive queue.
3. Click **Halt Queue**.
4. To confirm that you want to halt the queue, click **Yes**.

11. Stopping antivirus software

If you have antivirus software installed on any Windows-based servers, ensure that no scan jobs are running that would interfere with the upgrade process. Stop the antivirus services.

To stop antivirus software

1. On a Windows server to upgrade, launch the antivirus software.
2. Halt the scan operation according to the vendor's instructions.

12. Deleting old log files

Important!

This topic applies only when upgrading an existing server.

On the server being upgraded, remove any old log files to ensure that all future log information is a result of the migration procedure.

To delete old log files

1. On the server to be upgraded, open a command prompt.
2. Change to the **C:\mvf\bin** directory.
3. Run **stopall.bat**.
4. For future reference, copy all files in C:\mvf\data\logs\ to a backup location.
5. Delete all the files from C:\mvf\data\logs\.

13. Clearing the archive Logical Volume

Important!

This topic applies only when upgrading an existing server.

To avoid conflicts when upgrading, clear the archive Logical Volume. IMPAX re-creates the Logical Volume folders and files afterward.

CAUTION!

Ensure that the Logical Volume is empty before deleting it. If it is not empty, create a store job to archive the images in the Logical Volume.

To clear the archive Logical Volume

1. In the 6.2 or 6.3 Administration Tools, on the Setup tab, select **Archive Manager**.
2. Select the Logical Volume and click **Close**.
3. At the Close Volume prompt, click **Yes**.
4. Ensure that the Archive queue is halted (refer to page 13).
5. Delete the Logical Volume folder and files from the drive.

The Logical Volume folder and files are automatically re-created by IMPAX.

Upgrading an existing AS300 Database Server to IMPAX 6.4

2

When keeping the existing Database Server and upgrading it to IMPAX 6.4, the upgrade and migration procedure is more complex, but you do save on the cost of new hardware.

If you are replacing the existing Database Server with a new server, instead perform the *Replacing an existing Database Server with a new station* (refer to page 31) tasks.

1. Upgrading Windows Server 2003 to Windows Server 2003 SP2

If the IMPAX server that you are upgrading or installing is running Windows Server 2003, Windows Server 2003 Service Pack 1, or Windows Server 2003 R2, we recommend that you install Microsoft Windows Server 2003 Service Pack 2.

CAUTION!

This topic provides only basic upgrade instructions. For complete installation instructions, refer to the applicable topics in the Microsoft Server 2003 Technical Library, including the *Windows Server 2003 Service Pack 2 Installation and Deployment Guide*.

You can install SP2 from the SP2 CD or from the Web. The installation file is named WindowsServer2003-KB914961-SP2-*XXX-LLL*.exe, where *XXX* stands for the type of operating system (for example, x86) and *LLL* stands for the language (for example, ENU).

To install Windows Server 2003 SP2

1. Connect to the network or computer where you want to create the distribution folder.
2. In the shared folder, create a distribution folder for the service pack.
3. Copy WindowsServer2003-KB914961-SP2-*XXX-LLL*.exe into the distribution folder.

4. Open a command prompt.
5. To extract the files, type the following:

   WindowsServer2003-KB914961-SP2-*XXX-LLL***.exe /X:[***Path***]**

   If the distribution folder is local, you do not have to specify the path.
6. To install the service pack from a remote shared distribution folder, run **Update.exe**.

   If the distribution folder is local, Update.exe starts automatically.
7. Follow the instructions in the Setup Wizard.
8. When the installation process is complete, restart the computer.

When the computer restarts, log into Windows as an administrator-level user.

2. Upgrading to Internet Explorer 7

We recommend that you upgrade all IMPAX servers running earlier versions of Internet Explorer to Internet Explorer 7. To verify which version of Internet Explorer is being used, start Internet Explorer and select **Help** > **About Internet Explorer**.

To upgrade to Internet Explorer 7

1. Launch Internet Explorer on a computer connected to the Internet.
2. Go to

   http://www.microsoft.com/windows/downloads/ie/getitnow.mspx
3. From this page, you can either download Internet Explorer 7 or order it on CD.
4. Once you have obtained the software, run it on each server that needs upgrading.
5. To install the software, follow the on-screen prompts.

3. Upgrading the IMPAX database schema to IMPAX 6.4

Upgrading the 6.2 or later database schema to 6.4 requires the IMPAX Migration Tools. For Migration Tools installation instructions, refer to the "Installing the IMPAX 6.4 Migration Toolbox" section in the *Pre-Migration Guide—IMPAX 6.2 or later to IMPAX 6.4*.

CAUTION!

Any customization to the database such as extra indexes, stored procedures, or triggers may affect the schema upgrade. We recommend removing such customizations prior to the upgrade.

Even if replacing the server or standalone station with a new one, perform the upgrade on the existing server or station; you will later restore the upgraded database on the new server.

To upgrade the IMPAX database schema to IMPAX 6.4

1. Open a command prompt.

2. Change to the **C:\mvf-mig6\bin** directory.
3. Type

   database-upgrade-script.bat -v {62 | 63}
4. At the prompt

   ```
   Ready to upgrade database from current system version <version-number>.
   Do you want to proceed [q to quit]?
   ```

   Verify that the *version_number* listed is correct—for example, that it says **62** if upgrading from IMPAX 6.2. If so, press **Enter** to continue.

   If the version is incorrect, type **q** and press **Enter**, then repeat the previous step with the correct version number specified.
5. Respond appropriately to other prompts that appear.

The database is upgraded.

4. Checking the upgrade status

After upgrade the database, check the log file to ensure that the upgrade was successful.

To check the upgrade status

1. Open the log file called C:\mvf-mig6\data\logs\migrate_database_from_IMPAX*version_number*.log

   where *version_number* is the IMPAX version you are upgrade from, such as 52 or 63.
2. If the following warning appears in the log file, you can safely ignore it:

   ```
   Warning: The table 'CHANGE_CONTEXT_DETAIL' has been created but its
   maximum row size (8095) exceeds the maximum number of bytes per row
   (8060). INSERT or UPDATE of a row in this table will fail if the
   resulting row length exceeds 8060 bytes.
   ```
3. Ensure that Migration Complete Successful appears at the end of the log file.
4. If this message does not appear, review the rest of the log file to see where the upgrade failed. Solve the problem, then rerun the upgrade script.

5. Upgrading SQL Server database software

Important!

When upgrading an existing AS300 server to IMPAX 6.4, you **must** upgrade to SQL Server 2005 SP2.

The topics that follow describe how to upgrade to SQL Server 2005 SP2.

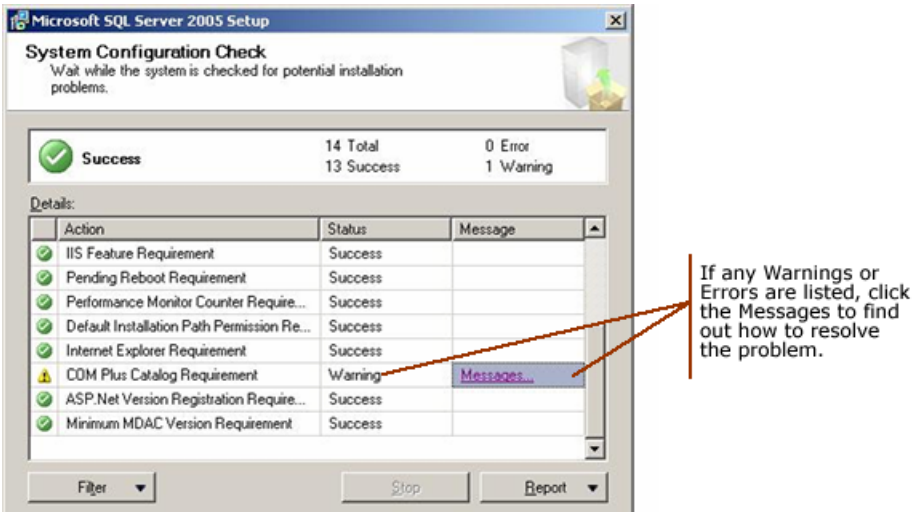
Upgrading SQL Server 2000 to SQL Server 2005

Before starting the upgrade from SQL Server 2000 to SQL Server 2005, ensure that you know what the SQL Server 2000 sa database password is, as you must enter it as part of the upgrade. Also ensure that you are logged into Windows as an administrator-level user.

Upgrading to SQL Server 2005 requires running the same installer used for a new install of SQL Server 2005.

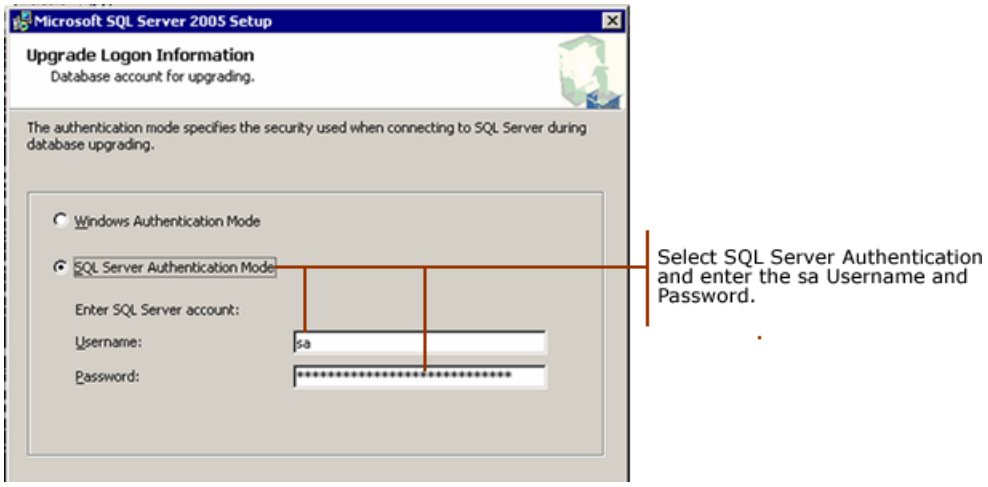
To upgrade SQL Server 2000 to SQL Server 2005

1. On the server to upgrade, ensure that the Distributed Transaction Coordination service is running:
    a. Open the Windows Administrative Tools and select **Services**.
    b. Select the **Distributed Transaction Coordination** service and, if it is not listed as started, click **Start Service**.
2. To launch the installer, follow the instructions supplied with the SQL Server 2005 software.
3. When prompted, accept the End User License Agreement. Click **Next**.
4. On the Installing Prerequisites screen, click **Install**. When the prerequisites are finished installing, click **Next**.
5. On the System Configuration Check screen, ensure that the Status for all is listed as Success. For any Warnings or Errors listed, click the **Message** and follow the instructions to resolve the problem.



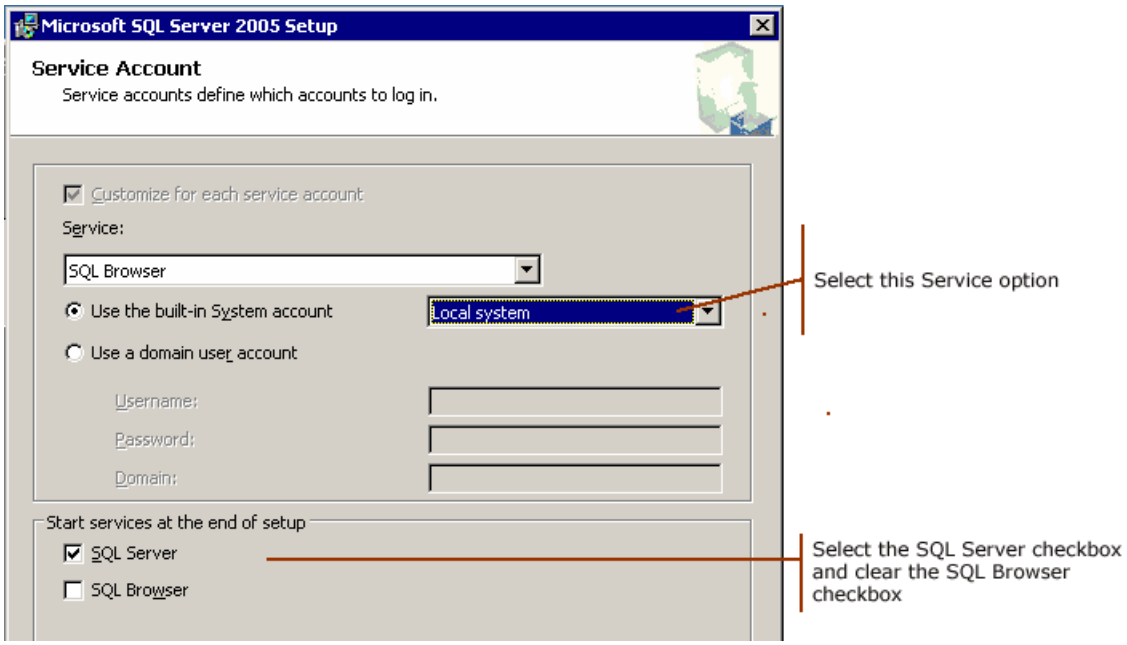
6. When the status of all items is Success, click **Next**.
7. On the Components to Install screen, select the following checkboxes:
    a. **SQL Server Database Services**
    b. **Integration Services**
    c. **Workstation components, Books Online and development tools**
8. Click **Next**.
9. On the Instance Name screen, select **Default instance**. Click **Next**.

10. On the Existing components screen, select the checkbox of your currently installed version of SQL Server. Click **Next**.
11. On the Upgrade Logon Information screen, select **SQL Server Authentication Mode**.


Microsoft SQL Server 2005 Setup
Upgrade Logon Information
Database account for upgrading.
The authentication mode specifies the security used when connecting to SQL Server during database upgrading.
Windows Authentication Mode
SQL Server Authentication Mode
Enter SQL Server account:
Username:
sa
Password:
Select SQL Server Authentication and enter the sa Username and Password.

12. In the Username field, type **sa**.
13. In the Password field, type the sa password. Click **Next**.
14. On the Service Account screen, select **Use the built-in System account**.

    This screen may vary, depending on the installed instances and components.



15. From the Use the built-in System account list, select **Local system**.
16. From the Service list, select **SQL Browser**.
17. Under Start services at the end of setup, select the **SQL Server** checkbox (if present) and clear the **SQL Browser** checkbox. Click **Next**.
18. On the Error and Usage Report Setting screen, leave both checkboxes cleared. Click **Next**.

19. On the Ready to Install screen, review the components to be installed and ensure that they are correct.

    The following components should be listed:

    - **SQL Server Database Services (Upgrade)**
    - **Integration Services**
    - **Client Components**

20. If the listed components are not correct, return to the Components to Install screen and select the correct items. Once the components are correct, click **Install**.
21. Wait while the components are upgraded or installed, then click **Next**.
22. On the Completing Microsoft SQL Server 2005 Setup screen, click **Finish**.
23. Restart the computer.

When the computer restarts, log into Windows as an administrator-level user.

The next steps in the upgrade process are to stop the SQL Server services, then to install SQL Server 2005 SP2.

Stopping SQL Server services

Before installing SQL Server 2005 SP2, stop the Windows SQL Server services.

To stop SQL Server services

1. Open the Windows Administrative Tools.
2. Select **Services**.
3. Select each of the following services in turn and click **Stop Service**, if needed:
    a. **SQL Server Full Text Search**
    b. **SQL Server Browser**
    c. **SQL Server Integration**
4. Close the Services window.

You can now install SQL Server 2005 SP2.

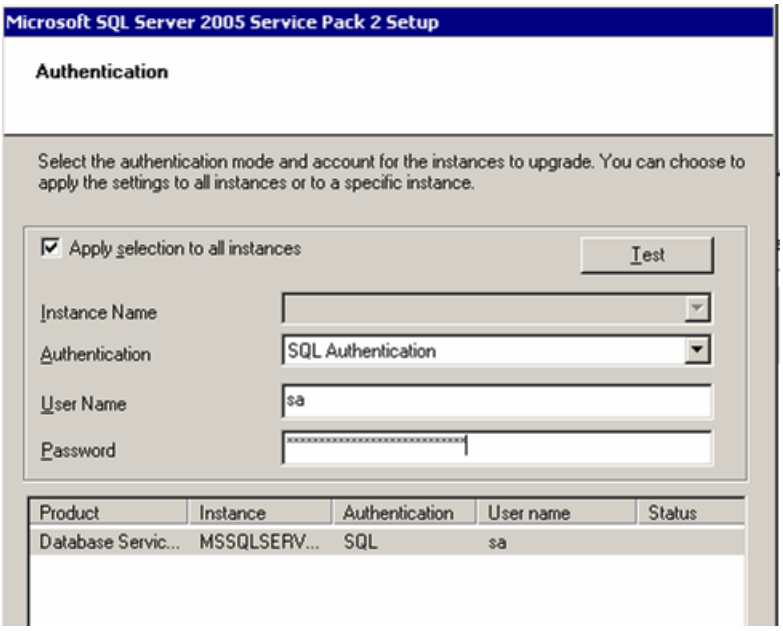
Installing SQL Server 2005 SP2

You must acquire SQL Server 2005 SP2 from Microsoft; for example, you can download it from their website. Before running the installer, ensure that you know what the sa (system administrator) database password is, as you must enter it during the installation. Install the Service Pack after installing the software and stopping the SQL services.

To install SQL Server 2005 SP2

1. Launch the SP2 installer.
2. If you see a security warning, click **Run**.

3. On the Welcome screen of the Setup window, click **Next**.
4. On the License Terms screen, select **I accept the agreement** and click **Next**.
5. On the Feature Selection screen, accept the default selections and click **Next**.
6. On the Authentication screen, select the **Apply selection to all instances** checkbox.



7. From the Authentication list, select **SQL Authentication**.
8. In the User Name field, type **sa**.
9. In the Password field, type the sa password. Click **Next**.
10. On the Error and Usage Report Setting screen, leave both checkboxes cleared. Click **Next**.
11. On the Running Processes screen, wait while the processes are identified. Then, click **Next**, even if some locked files are found.
12. On the Ready to Install screen, click **Install**.
13. On the Installation Progress screen, wait while the components are upgraded or installed, then click **Next**.
14. If the Computer Reboot Required prompt appears, click **OK**.

    This will not automatically restart the computer.
15. On the Installation Complete screen, click **Next**.
16. Clear the **Launch the User Provisioning Tool for Windows Vista after SP2 installation completes** checkbox.
17. Click **Finish**.
18. Restart the computer.

When the computer restarts, log into Windows as an administrator-level user.

6. Recording the names of previously installed IMPAX AS300 software packages

Before uninstalling the AS300 server packages for the previous release of IMPAX, record the package names. It is useful to know these before installing IMPAX 6.4.

To record the names of previously installed IMPAX AS300 software packages

1. On the Windows server to upgrade, select **Start** > **Run**.
2. In the Open field, type **regedit** and click **OK**.
3. In the Registry Editor, select **HKEY_LOCAL_MACHINE\SOFTWARE\Mitra Imaging Inc.** and **HKEY_LOCAL_MACHINE\SOFTWARE\Mitra** and make note of the installed packages (refer to page 22).

IMPAX packages found in the registry

The following are IMPAX packages that may be found in the registry. You may see some or all of these packages, depending on your configuration and the version of IMPAX installed:

Default packages	Location in HKEY_LOCAL_MACHINE\SOFTWARE\
MVFCore	Mitra Imaging Inc.\MVF Core v*number*
MVFCache	Mitra Imaging Inc.\MVF Cache v*number*
MVFSqlserver	Mitra Imaging Inc.\MVF SQLServer Extensions v*number*
MVFNetworkGateway	Mitra Imaging Inc.\MVF Network Gateway v*number*
AdministrationTools	Mitra\AdministrationTools
MVFocr	Mitra Imaging Inc.\MVF Ocrv*number*

Archive packages	Location in HKEY_LOCAL_MACHINE\SOFTWARE\
MVFjdlt	Mitra Imaging Inc.\MVF JDLT v*number*
MVFjdvd	Mitra Imaging Inc.\MVF JDVD v*number*
MVFscdr	Mitra Imaging Inc.\MVF SCDR v*number*
MVFhsm	Mitra Imaging Inc.\MVF HSM Archive v*number*
MVFsdlt	Disregard if found; not required for IMPAX 6.4.

Optional packages	Location in HKEY_LOCAL_MACHINE\SOFTWARE\
MVFCompressor	Mitra Imaging Inc.\MVF Compressor v*number*
MVFScavenger	Mitra Imaging Inc.\MVF Archive Scavenger v*number*
MVFCurator	Mitra Imaging Inc.\MVF Curator v*number*
MVFcdexport	Mitra Imaging Inc.\MVF CD Export v*number*

Optional packages	Location in HKEY_LOCAL_MACHINE\SOFTWARE\
MVFpap	Mitra Imaging Inc.\MVF PACS Archive Provided v*number*

Make note of the installed packages so that you can select the same ones when installing IMPAX 6.4.

7. Uninstalling the previous IMPAX software packages

If you are upgrading an existing server, before installing the IMPAX 6.4 AS300 server packages, uninstall the previous-version IMPAX packages.

To uninstall the previous IMPAX software packages

1. Open Control Panel.
2. Select **Add or Remove Programs**.
3. Under Currently installed programs, select **Agfa IMPAX 6.2** *version* or **Agfa IMPAX 6.3** *version* .
4. Click **Change/Remove**.
5. When prompted, type your name (minimum three characters).
6. In the Confirmation dialog, click **OK**.
7. In the Maintenance Complete dialog, select **Yes, I want to restart my computer now**, then click **Finish**.

When the server restarts, log into Windows as an administrator-level user.

8. Determining a password for the AgfaService account

During the IMPAX Server software installation, you are prompted to create a password for the AgfaService account. The password must conform to the following requirements:

- The password must be at least eight characters long.
- The password must not contain three or more characters from the user's account name.
- The password must contain characters from at least three of the following five categories:
  - Uppercase characters (A to Z)
  - Lowercase characters (a to z)
  - Digits (0 to 9)
  - Non-alphanumeric characters (for example, !, $, #, or %); avoid commas
  - Unicode characters

9. 32-bit AS300 installer packages reference

The standard (32-bit) IMPAX AS300 installer groups the packages to install under four sections: default, database, archive, and optional. The following tables explain each package.

Default package names	Purpose
MVFCore	Installs the DICOM Services for IMPAX and contains several core Windows services and database tables used by IMPAX.
MVFCache	Installs the DICOM SCU and autopilot services used by IMPAX and spftpd services. MVFcache includes mvf_compressor, used for lossy compression.
MVFNetworkGateway	Installs the SCP and APIP-SCP services used by IMPAX. Install this package only on stations that require Network Gateway functionality. Servers that support only internal transfers, not incoming DICOM communications, do not require it.
AdministrationTools	Installs the Java Administration Tools application for configuring and managing IMPAX. It also copies the Java Runtime Environment (JRE) self-extracting executable onto the system. This package is not available in the 64-bit installer, but must be installed as part of the IMPAX cluster. Therefore, if installing a 64-bit dedicated Database Server under Oracle, be sure to install this package on another AS300 server in the cluster. The package can be installed on more than one server, but run only one instance at a time (by disabling the other Administration Tools services).
MVFocr	Installs the files necessary to enable Optical Character Recognition. This is an optional installation that works in conjunction with the MVFNetworkGateway package. Install it only if your system requires OCR. The OCR package installs default OCR templates to handle many different modality vendors. OCR training tools are not included with IMPAX.
VaultAgfa	Includes specific requirements and database extensions. Not required on 64-bit systems.

Database package names	Purpose
Oracle Server Extension	Contains the files necessary to build an Oracle Server database to be used by IMPAX. New installs only. Not supported for upgrades. Also not supported for standalone and single-server configurations.
SQL Server Extension	Contains the files necessary to build a SQL Server database to be used by IMPAX.

Only one of the two Database Packages can be installed. Install these only on single-host servers or dedicated Database Servers.

Archive package names	Purpose
MVFjdlt	Installs the jukebox DLT (digital linear tape) package. For upgrades only. Not supported for new installations.
MVFjdvd	Installs the jukebox CD-R/DVD-R package.
MVFhsm	Installs the HSM package.
MVFsdlt	Installs the non-jukebox DLT or single DLT package. For upgrades only. Not supported for new installations.
MVFscdr	Installs the non-jukebox CD-R/DVD-R package.

Archiving considerations:

- If the server is used for viewing only (no archiving), do not install any archive packages.
- Install only the archive package that applies to your system configuration.
- PACS Store and Remember archiving is available but does not require an installation package. It does require an archive license. For details on setting up PACS Store and Remember archiving, refer to the *IMPAX 6.4 AS300 Configuration Guide*.

Optional package names	Purpose
MVFCompressor	Installs the MVF Compressor package, which includes mvf_compressor_scheduler. The mvf_compressor_scheduler process is responsible for scheduling the lossy compression of images.
MVFScavenger	Installs the Scavenger process. Scavenger copies studies from a source archive to the destination (local) archive. The Scavenger process runs on the destination archive station.
MVFCurator	Installs the Curator package. The Curator process compresses incoming images into Mitra wavelet format and stores them in the web cache. Studies compressed by the Curator process are served locally or over a network to display clients.
MVFcdexport	Installs the CD Export server, used with the CD Export feature in the IMPAX Client. The CD Export server processes local burn jobs created by the IMPAX Client and prepares the zip files containing the data for the burn job. For instructions on using CD Export, refer to "Exporting and viewing images from CD or DVD" (article ID 8209) in the *IMPAX 6.4 Client Knowledge Base*.
MVFchangeaccepter	Installs a package related to the processing of change context (cc) objects.

Optional package names	Purpose
	This feature is not required and we recommend that this package not be installed.
MVFpap	Installs the PAP package. A PACS Archive Provider (PAP) acts like a Service Class Provider (SCP) by receiving studies and allows sites to have their studies mirrored at another site through PACS Store and Remember archiving. This mirroring protects against data loss and enables studies at one PACS to be viewed at another. For instructions on configuring a PAP, refer to "Configuring a PACS Archive Provider (PAP)" in the *IMPAX 6.4 AS300 Configuration Guide*.
MVForadg	Installs a set of scripts and tools for configuring and monitoring Oracle Data Guard. Data Guard is Oracle's high-availability solution. **Important!** Data Guard works **only** on servers running Oracle Enterprise Edition. Do not install it on a database server using SQL Server or Oracle Standard Edition, and do not include it on other types of servers (Archive Server, Network Gateway, Curator).

AS300 installer log files

A log file containing detailed information about the system is created under C:\mvf\data\logs\SystemInfo.log.

10. Upgrading the IMPAX AS300 Database Server software

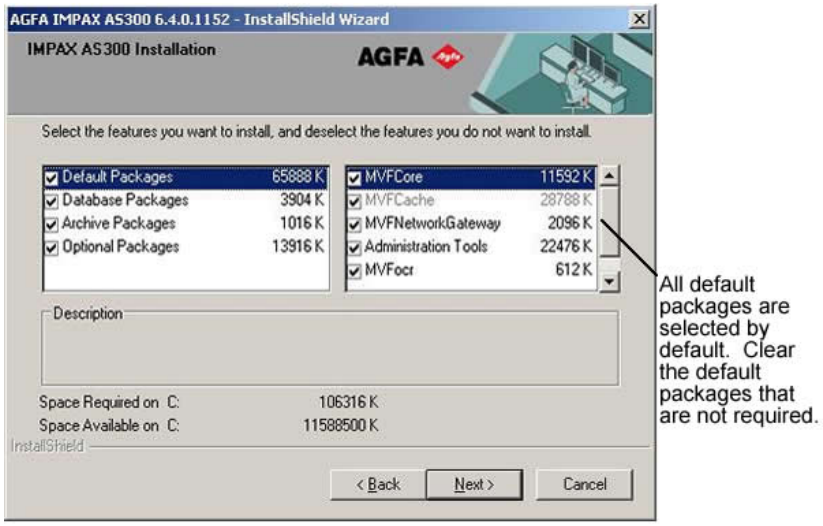
Use the IMPAX installer to install the necessary packages on the system when upgrading an existing IMPAX server. More information is available in *32-bit AS300 installer packages reference* (refer to page 24).

To upgrade the IMPAX AS300 Database Server software

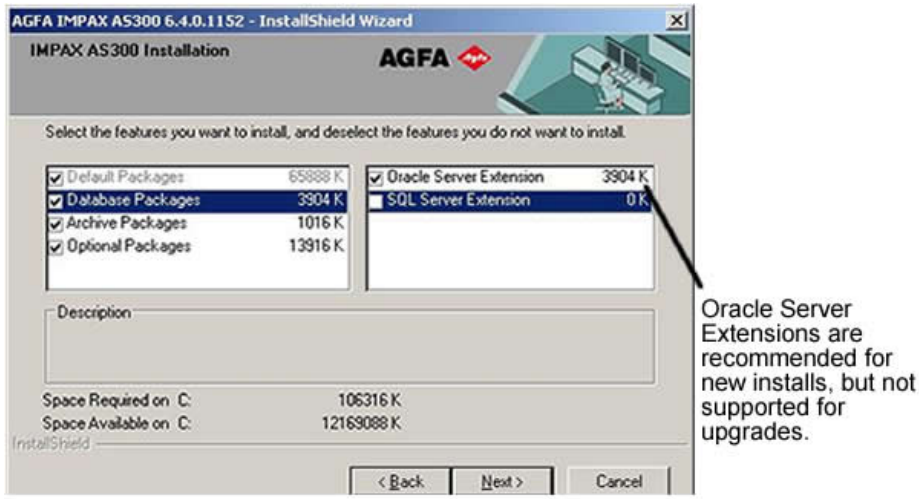
1. Insert the IMPAX 6.4 AS300 CD.
2. Navigate to D:\programs\mvf and double-click **as300-installer.exe**.
3. Type your name (minimum three characters).

   This information is recorded in the installer log file.
4. On the Welcome screen, click **Next**.
5. On the Select features screen, all default packages are selected by default. Clear the checkboxes of any packages that should not be installed.

For a single-host server, install all default packages except, potentially, the MVFocr package. For a dedicated Database Server, the MVFNetworkGateway package is not required, but can be installed.

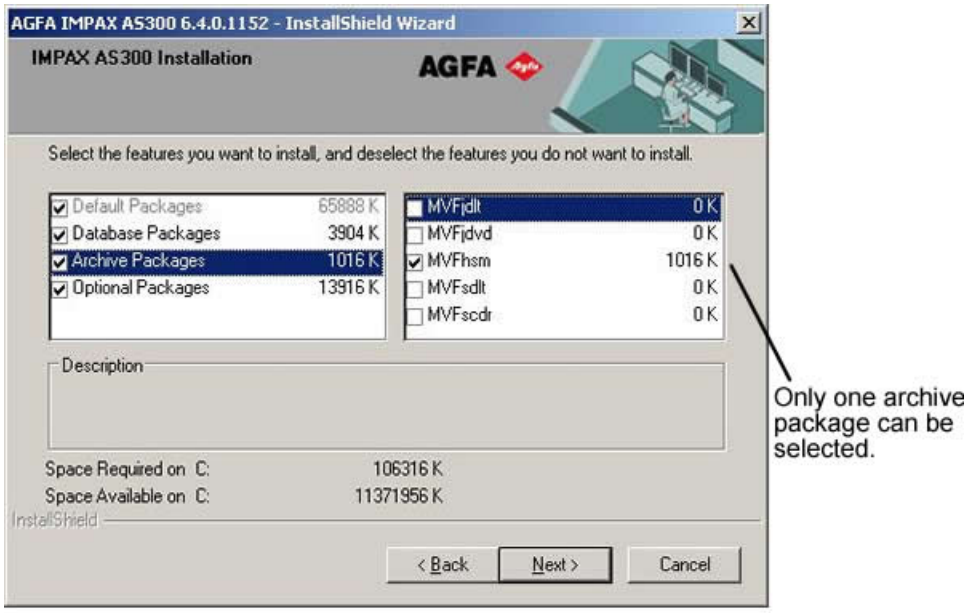

AGFA IMPAX AS300 6.4.0.1152 - InstallShield Wizard
IMPAX AS300 Installation
AGFA
Select the features you want to install, and deselect the features you do not want to install.
Default Packages 65888 K
Database Packages 3904 K
Archive Packages 1016 K
Optional Packages 13916 K
MVFCore 11592 K
MVFCache 28788 K
MVFNetworkGateway 2096 K
Administration Tools 22476 K
MVFocr 612 K
Description
Space Required on C: 106316 K
Space Available on C: 11588500 K
InstallShield
< Back
Next >
Cancel
All default packages are selected by default. Clear the default packages that are not required.

6. Select the **Database Packages** label. Because Oracle is not supported for upgrades, clear the **Oracle Server Extension** checkbox and select the **SQL Server Extension** checkbox.

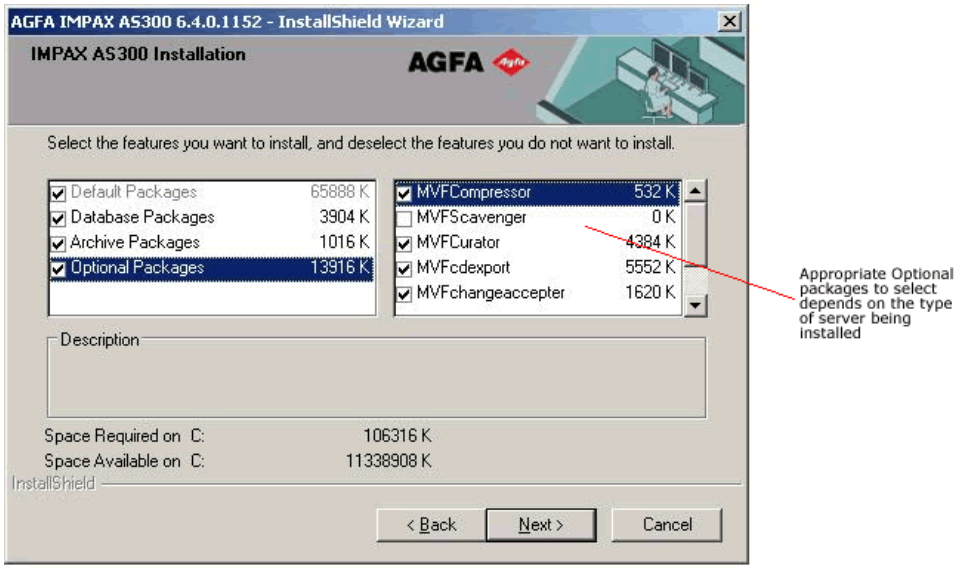

AGFA IMPAX AS300 6.4.0.1152 - InstallShield Wizard
IMPAX AS300 Installation
AGFA
Select the features you want to install, and deselect the features you do not want to install.
Default Packages 65888 K
Database Packages 3904 K
Archive Packages 1016 K
Optional Packages 13916 K
Oracle Server Extension 3904 K
SQL Server Extension 0 K
Description
Space Required on C: 106316 K
Space Available on C: 12169088 K
InstallShield
< Back
Next >
Cancel
Oracle Server Extensions are recommended for new installs, but not supported for upgrades.

7. If upgrading a single-host server, select the **Archive Packages** label—*not* the checkbox—then select the archive package the server is using.

   For a dedicated Database Server (no archive), clear the **Archive Packages** checkbox.


AGFA IMPAX AS300 6.4.0.1152 - InstallShield Wizard
IMPAX AS300 Installation
AGFA
Select the features you want to install, and deselect the features you do not want to install.
Default Packages 65888 K
Database Packages 3904 K
Archive Packages 1016 K
Optional Packages 13916 K
MVFjdlt 0 K
MVFjdvd 0 K
MVFhsm 1016 K
MVFsdlt 0 K
MVFscdr 0 K
Description
Space Required on C: 106316 K
Space Available on C: 11371956 K
InstallShield
< Back
Next >
Cancel
Only one archive package can be selected.

8. Select the **Optional Packages** label, then select the checkboxes of any optional packages that should be installed.


AGFA IMPAX AS300 6.4.0.1152 - InstallShield Wizard
IMPAX AS300 Installation
AGFA
Select the features you want to install, and deselect the features you do not want to install.
Default Packages 65888 K
Database Packages 3904 K
Archive Packages 1016 K
Optional Packages 13916 K
MVFCompressor 532 K
MVFScavenger 0 K
MVFCurator 4384 K
MVFcdexport 5552 K
MVFchangeaccepter 1620 K
Description
Space Required on C: 106316 K
Space Available on C: 11338908 K
InstallShield
< Back
Next >
Cancel
Appropriate Optional packages to select depends on the type of server being installed

- Select the **MVFCurator** and **MVFcdexport** checkboxes only if intending to install the Curator and CD Export server components on the Database Server rather than on a dedicated Curator server.
- Select the **MVFScavenger** and **MVFpap** packages only if the server is being used for archiving.
- Clear the **MVFchangeaccepter** checkbox.
- Do **not** select the MVForadg checkbox.

9. Click **Next**.

10. If a Network Gateway package was installed, browse to the location of the MVF license file and click **OK**.

    If the mvf.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.

11. If an Archive package was installed, browse to the location of the archive license file and click **OK**.

    If the mvfarch.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.

12. When prompted, type a password for the AgfaService user.

    The password must follow the password requirements as outlined in *Determining a password for the AgfaService account* (refer to page 23).

13. On the Create a new database or use an existing one screen, select **Use an existing one.** Click **Next**.
14. To confirm the upgrade of the database, click **Yes**.
15. Type the fully qualified host name of the Application Server. Click **Next**.
16. On the Ready to begin installation screen, click **Next**.

    The files are copied to the system.

17. To display the log file for the scripts, at the prompt, click **Yes**.
18. Check the log files for errors, then close the log files.

    The dialogs must be closed for the installation script to continue.

19. After all the packages have been installed, to close the installation wizard and restart the system, click **Yes, I want to restart my computer now**.

    If you are not prompted to restart your computer, manually restart it.

When the computer restarts, log into Windows as an administrator-level user.

11. Generating the portable password file

To install the other components, you must generate a password file from the Database Server to synchronize passwords between the components. The file contains all of the user IDs and passwords for all default IMPAX users. The file must be copied to other components as requested during those installations.

To generate the portable password file

1. On the Database Server, open a command prompt.
2. Change to the **C:\mvf\bin** directory.
3. Type

   passkey -M EXPORT -k *temporary_password*

   where *temporary_password* is the password used to import the password file when installing or configuring the other components.

The password file is created in C:\mvf\mvf.portable.psd.

CAUTION!

The mvf.portable.psd file contains sensitive information. To ensure that the security of the system is maintained, delete the password file after all required components are installed.

12. Updating the SQL Server registration

To correctly register SQL Server with the Database Server software and set up permissions within SQL Server, update the SQL Server registration. To do so, you must be logged into Windows as an administrator-level user.

To update the SQL Server registration

1. Select **Start** > **All Programs** > **Microsoft SQL Server 2005**.
2. Right-click **SQL Server Management Studio** and select **Run as**.
3. In the Run as dialog, select **The following user**.
4. From the User name list, select **AgfaService**.
5. In the Password field, type the password for the AgfaService account and click **OK**.

Replacing an existing Database Server with a new station

3

When replacing the existing Database Server with a new one, you install all external and IMPAX 6.4 software in advance, during the pre-migration period, saving you considerable time during the migration weekend.

1. Upgrading the IMPAX database schema to IMPAX 6.4

Upgrading the 6.2 or later database schema to 6.4 requires the IMPAX Migration Tools. For Migration Tools installation instructions, refer to the "Installing the IMPAX 6.4 Migration Toolbox" section in the *Pre-Migration Guide—IMPAX 6.2 or later to IMPAX 6.4*.

CAUTION!

Any customization to the database such as extra indexes, stored procedures, or triggers may affect the schema upgrade. We recommend removing such customizations prior to the upgrade.

Even if replacing the server or standalone station with a new one, perform the upgrade on the existing server or station; you will later restore the upgraded database on the new server.

To upgrade the IMPAX database schema to IMPAX 6.4

1. Open a command prompt.
2. Change to the **C:\mvf-mig6\bin** directory.
3. Type

   database-upgrade-script.bat -v {62 | 63}
4. At the prompt

```
Ready to upgrade database from current system version <version-number>.
Do you want to proceed [q to quit]?
```

Verify that the *version_number* listed is correct—for example, that it says **62** if upgrading from IMPAX 6.2. If so, press **Enter** to continue.

If the version is incorrect, type **q** and press **Enter**, then repeat the previous step with the correct version number specified.

5. Respond appropriately to other prompts that appear.

The database is upgraded.

2. Checking the upgrade status

After upgrade the database, check the log file to ensure that the upgrade was successful.

To check the upgrade status

1. Open the log file called C:\mvf-mig6\data\logs\migrate_database_from_IMPAX*version_number*.log

   where *version_number* is the IMPAX version you are upgrade from, such as 52 or 63.

2. If the following warning appears in the log file, you can safely ignore it:

   ```
   Warning: The table 'CHANGE_CONTEXT_DETAIL' has been created but its
   maximum row size (8095) exceeds the maximum number of bytes per row
   (8060). INSERT or UPDATE of a row in this table will fail if the
   resulting row length exceeds 8060 bytes.
   ```

3. Ensure that Migration Complete Successful appears at the end of the log file.
4. If this message does not appear, review the rest of the log file to see where the upgrade failed. Solve the problem, then rerun the upgrade script.

3. Backing up the AS300 SQL database

After upgrading the database on the previous-version server, you must back it up so that you can then restore it onto the new IMPAX 6.4 server.

You must be in the SQL application environment to run the backup command.

To back up an AS300 SQL database

1. On the server running the AS300 database, select **Start** > **All Programs** > **Microsoft SQL Server** > **Enterprise Manager**.
2. In the Explorer window of the Enterprise Manager, expand **Console Root** > **Microsoft SQL Servers** > **SQL Server Group** > *server* > **Databases** > *database*

   where *server* is the name of the SQL Server IMPAX is running under and *database* is the name of the database to be backed up.

3. Select **Action** > **All Tasks** > **Backup database**.

4. Configure the General and Options tabs according to your preferences for items such as the type of backup, the destination, and whether to overwrite or append to the media.
5. To start the backup, click **OK**.
6. Exit the SQL Server Enterprise Manager.

4. Restoring the upgraded database on a new Database Server

CAUTION!

Perform this task only when replacing an existing server with a new server. Be very careful not to delete any live database files. Perform this procedure only on a new server that has not had any clinical use, even as a training server. Do not perform this procedure on any production, training, or traveling servers.

When replacing the existing server with a new server, you first install the IMPAX 6.4 server software on the new server. You then upgrade the database on the old server, and back up the upgraded database. Finally, you restore a backup of the upgraded database onto the new server, as described in this topic.

Note:

Shut down all applications that usually connect to the SQL Server database. Under Services, stop the SQL Server agent. Also, shut down the SQL Server Query Analyzer when not using it as part of the restore process.

To restore the upgraded database on the new Database Server

1. If you are restoring from tape, insert the backup tape into the tape drive.
2. In the Explorer window of the SQL Server Management Studio, expand *server* > **Databases** > **System Databases**

   where *server* is the name of the SQL Server that IMPAX is running under.
3. Right-click the mvf database to restore and select **Tasks** > **Restore** > **Database**.
4. In the Restore database dialog, beside Restore, select **From device**.
5. Click **Select Devices**. Click **OK**.
6. Under Backup set to restore backup set, select **Database - complete**.
7. Switch to the **Options** tab.
8. Select **Overwrite the existing database**.
9. Select **Leave database ready to use by rolling back uncommitted transactions. Additional transaction logs cannot be restored.** Click **OK**.

   The database is restored. After the restore is complete, a confirmation message appears stating whether the restore was successful.
10. Restore the mvf user permissions:
    a. Open SQL Server Management Studio.

b. Open a new query window.

c. Select **File** > **Open** and browse to C:\mvf\etc.

d. Select **recreate_user_mvf.sql** and click **Open**.

e. To execute the script, press **F5** or click **Execute**.

5. Generating the portable password file

To install the other components, you must generate a password file from the Database Server to synchronize passwords between the components. The file contains all of the user IDs and passwords for all default IMPAX users. The file must be copied to other components as requested during those installations.

To generate the portable password file

1. On the Database Server, open a command prompt.
2. Change to the **C:\mvf\bin** directory.
3. Type

   passkey -M EXPORT -k *temporary_password*

   where *temporary_password* is the password used to import the password file when installing or configuring the other components.

The password file is created in C:\mvf\mvf.portable.psd.

CAUTION!

The mvf.portable.psd file contains sensitive information. To ensure that the security of the system is maintained, delete the password file after all required components are installed.

6. Updating the SQL Server registration

To correctly register SQL Server with the Database Server software and set up permissions within SQL Server, update the SQL Server registration. To do so, you must be logged into Windows as an administrator-level user.

To update the SQL Server registration

1. Select **Start** > **All Programs** > **Microsoft SQL Server 2005**.
2. Right-click **SQL Server Management Studio** and select **Run as**.
3. In the Run as dialog, select **The following user**.
4. From the User name list, select **AgfaService**.
5. In the Password field, type the password for the AgfaService account and click **OK**.

Upgrading AS300 Network Gateway and Archive packages to IMPAX 6.4

4

These procedures are relevant when:

- Upgrading the site in a multi-host or mixed-configuration.

  and

- Upgrading existing AS300 Archive Server or Network Gateway server stations to IMPAX 6.4, rather than replacing them with new stations.

Note:

If upgrading the site in a single-host configuration or replacing existing stations with new ones (on which IMPAX 6.4 software can be installed in advance), Network Gateway and Archive Server upgrades are not required. Instead, proceed with the Reconfiguring the Application Server and Curator tasks.

1. Recording the names of previously installed IMPAX AS300 software packages

Before uninstalling the AS300 server packages for the previous release of IMPAX, record the package names. It is useful to know these before installing IMPAX 6.4.

To record the names of previously installed IMPAX AS300 software packages

1. On the Windows server to upgrade, select **Start** > **Run**.

2. In the Open field, type **regedit** and click **OK**.
3. In the Registry Editor, select **HKEY_LOCAL_MACHINE\SOFTWARE\Mitra Imaging Inc.** and **HKEY_LOCAL_MACHINE\SOFTWARE\Mitra** and make note of the installed packages (refer to page 22).

2. Uninstalling the previous IMPAX software packages

If you are upgrading an existing server, before installing the IMPAX 6.4 AS300 server packages, uninstall the previous-version IMPAX packages.

To uninstall the previous IMPAX software packages

1. Open Control Panel.
2. Select **Add or Remove Programs**.
3. Under Currently installed programs, select **Agfa IMPAX 6.2** *version* or **Agfa IMPAX 6.3** *version* .
4. Click **Change/Remove**.
5. When prompted, type your name (minimum three characters).
6. In the Confirmation dialog, click **OK**.
7. In the Maintenance Complete dialog, select **Yes, I want to restart my computer now**, then click **Finish**.

When the server restarts, log into Windows as an administrator-level user.

3. Configuring the ODBC connection to the SQL Database Server

Configure the ODBC connection to the SQL Database Server for Windows. This connection is required for the Archive Server, Network Gateway, and Curator to communicate with an AS300 Database Server running under SQL Server (and therefore does not apply if using an AS300 Oracle for Windows database or if connecting to an AS3000 Database Server).

To configure the ODBC connection to the SQL Database Server

1. On the server to connect, open the Windows Administrative Tool and select **Data Sources (ODBC)**.
2. Switch to the **System DSN** tab.
3. Click **Add**.
4. In the Create New Data Source dialog, select **SQL Server**.
5. Click **Finish**.
6. In the Name field, type **mvf**.
7. In the Description field, type **mvf**.
8. In the Server list, type or select the Database Server name. Click **Next**.
9. If asked whether to overwrite the existing MVF_SQL, click **Yes**.

10. Select the **SQL Server Authentication** option.
11. In the Login ID and Password fields, type the username and password for the mvf user.

    Ensure that all systems have the same username and password for the Database Server.
12. Click **Client Configuration**.
13. In the Add Network Library Configuration dialog, select **TCP/IP**. Click **OK**.
14. Click **Next**.
15. Select the **Change the default database to** checkbox.
16. From the list, select **mvf**. Click **Next**.
17. Clear the **Perform translation for character data** checkbox.
18. Click **Finish**.
19. To test the connection, click **Test Connection**.
20. In the ODBC Driver Connect dialog, type the password for the mvf user and click **OK**.
21. When prompted that the connection was successful, click **OK**.
22. To close the Oracle ODBC Driver Configuration dialog, click **OK**.
23. To close the ODBC Data Source Administrator window, click **OK**.

4. Installing the IMPAX 6.4 AS300 Network Gateway and Archive Server packages

To install IMPAX AS300 software, you must be logged into Windows as an administrator-level user.

Use the IMPAX installer to install the necessary packages on the system (refer to page 24).

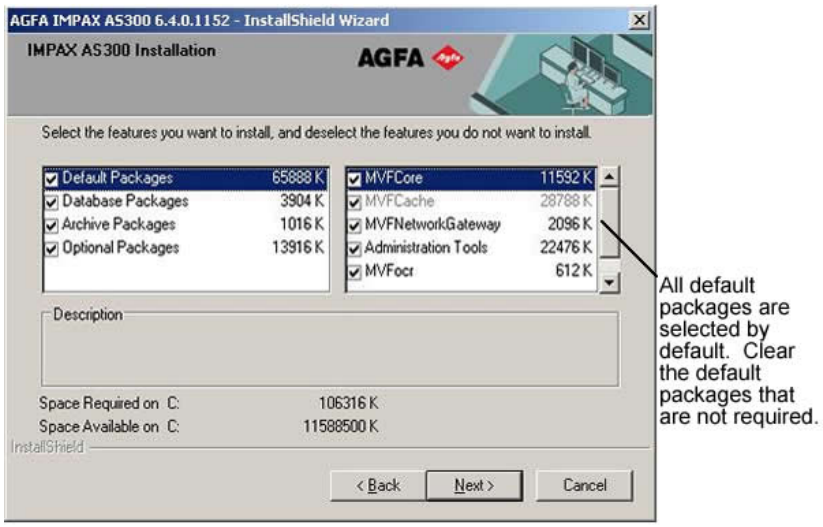
To install the IMPAX 6.4 AS300 Network Gateway and Archive Server packages

1. Insert the IMPAX AS300 CD.
2. Navigate to D:\programs\mvf and double-click **as300-installer.exe**.
3. Type your name (minimum three characters).

   This information is recorded in the installer log file.
4. On the Welcome screen, click **Next**.
5. On the Select features screen, all default packages are selected. Clear the checkboxes of any default packages that should not be installed.

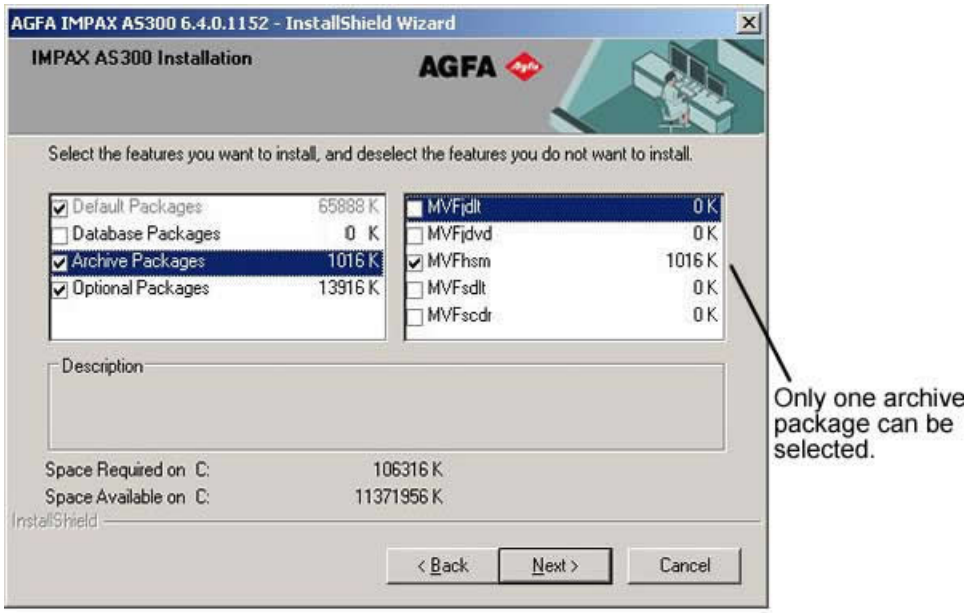
   If installing a Network Gateway or an Archive Server/Network Gateway combination, you can normally leave all the default packages selected.

   If installing a dedicated Archive Server, clear the **MVFNetworkGateway** and **MVFocr** checkboxes.

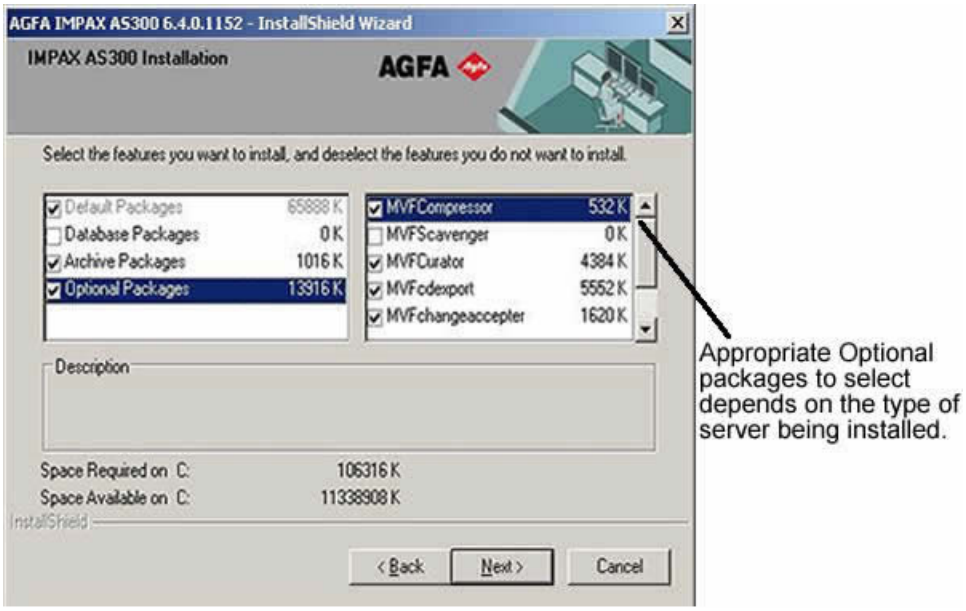

AGFA IMPAX AS300 6.4.0.1152 - InstallShield Wizard
IMPAX AS300 Installation
AGFA
Select the features you want to install, and deselect the features you do not want to install.
Default Packages 65888 K
Database Packages 3904 K
Archive Packages 1016 K
Optional Packages 13916 K
MVFCore 11592 K
MVFCache 28788 K
MVFNetworkGateway 2096 K
Administration Tools 22476 K
MVFocr 612 K
Description
Space Required on C: 106316 K
Space Available on C: 11588500 K
InstallShield
< Back
Next >
Cancel
All default packages are selected by default. Clear the default packages that are not required.

6. Clear the **Database Packages** checkbox.
7. For Archive Servers, select the **Archive Package** label, then select the checkbox of the archive package to install. MVFhsm is selected by default.

   For dedicated Network Gateway servers, clear the **Archive Packages** checkbox.


AGFA IMPAX AS300 6.4.0.1152 - InstallShield Wizard
IMPAX AS300 Installation
AGFA
Select the features you want to install, and deselect the features you do not want to install.
Default Packages 65888 K
Database Packages 0 K
Archive Packages 1016 K
Optional Packages 13916 K
MVFjdlt 0 K
MVFjdvd 0 K
MVFhsm 1016 K
MVFsdlt 0 K
MVFscdr 0 K
Description
Space Required on C: 106316 K
Space Available on C: 11371956 K
InstallShield
< Back
Next >
Cancel
Only one archive package can be selected.

8. Select the **Optional Packages** label.
9. Select any optional packages that should be installed, and clear the other checkboxes.


AGFA IMPAX AS300 6.4.0.1152 - InstallShield Wizard
IMPAX AS300 Installation
AGFA
Select the features you want to install, and deselect the features you do not want to install.
Default Packages 65888 K
Database Packages 0 K
Archive Packages 1016 K
Optional Packages 13916 K
MVFCompressor 532 K
MVFScavenger 0 K
MVFCurator 4384 K
MVFcdexport 5552 K
MVFchangeaccepter 1620 K
Description
Space Required on C: 106316 K
Space Available on C: 11338908 K
InstallShield
< Back
Next >
Cancel
Appropriate Optional packages to select depends on the type of server being installed.

Unless intending to use this station as a Curator and CD Export server, clear the **MVFCurator** and **MVFcdexport** checkboxes.

MVFCompressor, **MVFScavenger** and **MVFPap** may be useful on an Archive Server.

Clear the **MVFchangeaccepter** checkbox.

Do **not** select the **MVForadg** package. This is only for Database Servers using Oracle Data Guard.

10. Click **Next**.
11. If installing a Network Gateway or Archive Server/Network Gateway combination, browse to the location of the MVF license file and click **OK**.

    If the mvf.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.
12. If installing an Archive Server or Archive Server/Network Gateway combination, browse to the location of the MVF archive license file and click **OK**.

    If the mvfarch.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.
13. Browse to the location of the portable password file and click **OK**.
14. Type the temporary password used to create the portable password file and click **OK**.

    The mvf.psd file is imported under C:\mvf.
15. On the Summary screen, click **Next**.

    The files are copied.
16. If using a jukebox CD-R or DVD-R archive:
    a. Follow the prompts in the Veritas Px Engine Setup.
    b. When prompted to restart the computer after the engine is installed, click **No**.
17. After all the packages have been installed, to close the installation wizard and restart the system, click **Yes, I want to restart my computer now**.

    If you are not prompted to restart your computer, manually restart it.

After the server restarts, log into Windows as an administrator-level user.

5. Installing and configuring Store and Remember archiving

Important!

This topic applies only to an Archive Server or to the Archive component of a single-host server (including standalone with archive and single-server configurations).

Some sites may want to have their studies mirrored at another site through PACS Store and Remember archiving. This mirroring protects against loss of data and allows studies from one PACS to be viewed at another. This can be achieved effectively using the PACS Archive Provider (PAP).

For instruction on installing and configuring a PACS Archive Provider, refer to the "Configuring a PACS Archive Provider (PAP)" topic in the *IMPAX 6.4 AS300 Configuration Guide*.

Upgrading the other IMPAX 6.4 components

5

To complete the migration to IMPAX 6.4, the Application Server, Curator, and Clients must be upgraded, and a few configurations are required.

1. Upgrading the Application Server

All Application Servers must be upgraded to IMPAX 6.4.

For AS3000 (Solaris server) sites, before upgrading the Application Server, ensure that you have uninstalled the previous version of the Oracle Client and installed and configured the Oracle 10g Client.

Backing up the ADAM database

Backing up the ADAM database at this time is important in the event that the Application Server upgrade fails.

To back up the ADAM database

1. Select **Start** > **All Programs** > **Accessories** > **System Tools** > **Backup**.
2. Select **Tools** > **Options**.
3. Switch to the **Exclude Files** tab.
4. In the list of file names, select **C:\Program Files\Microsoft ADAM** and click **Remove**. Click **OK**.
5. When the Backup or Restore Wizard is displayed, clear the **Always start in Wizard mode** checkbox and click **Advanced Mode**.
6. On the Welcome screen, click **Backup Wizard**.
7. On the Backup Wizard screen, click **Next**.
8. On the What to Backup screen, select **Backup selected files, drives, or network data**. Click **Next**.

9. On the Items to Backup screen, select the folder containing the ADAM data as well as the **World Wide Web Publishing Service** folder. Click **Next**.

   The default location for the ADAM database is C:\Program Files\Microsoft ADAM\AgfaHealthcare.

10. If backing up to a tape drive, under Backup media type, select the tape drive, and in the backup media area, click **New media**. Click **Next**.

    or

    If backing up to any other media type, select the location where the backup is to be saved, and type a name for the backup. Click **Next**.

11. On the Completing the Backup Wizard screen, click **Advanced**.
12. On the Type of Backup screen, select **Normal.** Click **Next**.
13. On the How to Backup screen, select **Verify data after backup and Use hardware compression if available.** Click **Next**.
14. On the Backup Options screen, select **Replace the existing backups**. Click **Next**.
15. On the When to Backup screen, select **Now**. Click **Finish**.
16. In the Backup Progress dialog, click **Close**.
17. Close the Backup Utility.

Uninstalling IMPAX documentation

You must uninstall any existing IMPAX documentation before you can install the new IMPAX 6.4 documentation.

Uninstalling IMPAX 6.2 documentation

Although the three IMPAX 6.2 Knowledge Bases are installed together, they must be separately uninstalled.

To uninstall the IMPAX 6.2 Knowledge Bases and guides

1. Open Control Panel.
2. Select **Add or Remove Programs**.
3. Under Currently installed programs, select **IMPAX 6.2 Documentation**.
4. Click **Change/Remove**.
5. In the Confirmation dialog, click **OK**.
6. In the Maintenance Complete dialog, click **Finish**.
7. Under Currently installed programs, select **IMPAX Application Server Knowledge Base**.
8. Click **Change/Remove**.
9. In the Confirmation dialog, click **OK**.
10. In the Maintenance Complete dialog, click **Finish**.
11. Under Currently installed programs, select **Impax Client Knowledge Base**.
12. Click **Change/Remove**.

13. In the Confirmation dialog, click **OK**.
14. In the Maintenance Complete dialog, click **Finish**.
15. Under Currently installed programs, select **IMPAX Server Knowledge Base**.
16. Click **Change/Remove**.
17. In the Confirmation dialog, click **OK**.
18. In the Maintenance Complete dialog, click **Finish**.

Uninstalling IMPAX 6.3 documentation

All IMPAX 6.3 documentation can be uninstalled at once.

To uninstall the IMPAX 6.3 Knowledge Bases and guides

1. Open Control Panel.
2. Select **Add or Remove Programs**.
3. Under Currently installed programs, select **AGFA IMPAX 6.3.0 Knowledge Base** *buildnumber* **Documentation**.
4. Click **Remove**.
5. In the confirmation dialog, click **OK**.

   A progress dialog appears as the documentation is uninstalled, giving the amount of time remaining. When the process is complete, the dialog closes.
6. Close Add or Remove Programs.

All installed IMPAX 6.3 documentation is uninstalled.

Upgrading the ADAM database

Unlike previous versions of the IMPAX Application Server, you do not have to manually migrate the ADAM database by running migrate.bat. Instead, the migration is performed automatically during the software upgrade.

The results of the ADAM migration are recorded in the log files ImpaxAdam.log and MigrateADAM.log in the C:\Impax\Logs directory.

Upgrading the IMPAX Application Server software to 6.4

After backing up the ADAM database, you can upgrade the Application Server software.

Note:

This installation does not overwrite the existing ADAM database.

To upgrade the IMPAX Application Server software to 6.4

1. Insert the IMPAX Business Services CD.

2. Navigate to the appserver folder, which contains the Business Services software.
3. Run **agfa impax business services setup.exe**.
4. On the Installing Visual JSharp page, click **OK**.

   Tip:

   If Visual JSharp package is already installed on the machine, the installation package skips the installation. In this case, this step does not apply.

5. On the Welcome screen, click **Next**.
6. On the license agreement screen, select **I accept the terms in the license agreement**. Click **Next**.
7. On the Web Services Installation Folder screen, click **Change**.
8. Set the path to the **wwwroot** directory so that it matches the pre-upgrade installation location. Click **OK**.

   For example, set the path to J:\wwwroot rather than C:\inetpub\wwwroot.
9. Click **Next**.
10. On the Setup Type screen, click **Custom**. Click **Next**.
11. If you have an IMPAX Reporting to connect to, under RIS Web Services, select **This feature will be installed on local hard drive**. Click **Next**.
12. Click **Next**. Click **Install**.
13. On the InstallShield Wizard Completed screen, select **Launch Configuration Tool** and click **Finish**.
14. When the message `Previous configuration found from version 6.X.X...` appears, click **Yes**.

    The Configuration Tool is opened.
15. In the Configuration Tool, click **Apply**.
16. To close the Configuration Tool, click **OK**.

The Application Server software is upgraded.

Upgrading additional Application Servers in the cluster

Perform the following tasks on each additional Application Server in the cluster:

To upgrade additional Application Servers in the cluster

1. Uninstall the IMPAX 6.2 or 6.3 documentation (refer to page 42).
2. Upgrade the IMPAX Application Server software (refer to page 43).
3. Install the IMPAX 6.4 Documentation (refer to page 45).
4. Verify the installation.

Installing the IMPAX documentation

The IMPAX 6.4 documentation is installed on the Application Server.

CAUTION!

Before installing the IMPAX 6.4 documentation, ensure that you have uninstalled any past IMPAX documentation. The 6.4 documentation installer will not prompt you to uninstall the old documentation, and having both sets installed will prevent the 6.4 documentation from working correctly.

IMPAX is shipped with three sets of documentation: the *IMPAX 6.4 Client Knowledge Base* and related guides, the *IMPAX 6.4 Application Server Knowledge Base* and related guides, and the *IMPAX 6.4 Server Knowledge Base* and related guides. The IMPAX documentation set appears on its own installation DVD.

To install the IMPAX documentation

1. Insert the IMPAX Documentation DVD.
2. From the DVD root, double-click **IMPAXDocumentationSetup.exe**.

   A Preparing to install message appears.
3. On the Welcome screen, click **Next**.
4. On the Setup Type screen, select the appropriate option and click **Next**.
   - To install all documentation in all available languages (up to 24 languages), select **All Documentation**.
   - To install all English-language documentation, select **All English Documentation**. This is the default.
   - To select which documentation to install in which languages, select **Select Documentation to Install**.
5. If you selected Select Documentation to Install, on the Choose Features screen, you can select particular Knowledge Bases or languages to install.
   - To install the IMPAX Client Knowledge Base in two or more languages, click beside the name of the language to install and select **This feature will be installed on the local hard drive**. (Note that English must be installed.)
   - To **not** install the IMPAX Server, IMPAX Application Server, or IMPAX Client documentation, click beside the appropriate label and select **This feature will not be available**.
6. On the Ready to Install the Program screen, click **Install**.

   Installation progress messages are displayed.
7. On the InstallShield Wizard Completed screen, click **Finish**.

The selected IMPAX documentation is now installed. Shortcuts appear in the Start menu and on the desktop.

Running Healthcheck to check the status of web services

Healthcheck checks the status of each web service running on the Application Server. When you run Healthcheck, it attempts to connect to each of the web services. If it succeeds, Healthcheck sets the status to Passed. If Healthcheck fails, the status is set to Failed. The comment field indicates where the failure occurred.

Note:

Healthcheck verifies only installed services, and it does not indicate if a service is not installed.

To run Healthcheck to check the status of the web services

1. Ensure that the Healthcheck web.config file has been configured to the site's needs.
2. On the Application Server, launch Internet Explorer.
3. In the address bar, if Healthcheck has not been configured to automatically log in, type

   https://*fully_qualified_domain_name*/**AgfaHC.Healthcheck.Escrow/AuthenticationForm.aspx**

   or

   If Healthcheck has been configured to automatically log in, type

   https://*fully_qualified_domain_name*/**AgfaHC.Healthcheck.Escrow/EscrowForm.aspx**

To	Append	Example
View the results in HTML	**?format=html** to the end of the URL	https://appserver.hospital.com/AgfaHC.Healthcheck.Escrow/EscrowForm.aspx?format=html
Add a refresh frequency	**?refresh=***seconds* to the end of the URL	https://appserver.hospital.com/AgfaHC.Healthcheck.Escrow/EscrowForm.aspx?refresh=60
View the results in HTML and add a refresh frequency in the same URL	**?format=html&refresh=***seconds* to the end of the URL	https://appserver.hospital.com/AgfaHC.Healthcheck.Escrow/EscrowForm.aspx?format=html&refresh=60

CAUTION!

Setting the refresh interval below five seconds impacts performance.

4. If Healthcheck has not been configured to automatically log in, type an IMPAX Administrator Username and Password, select the login domain, and click **Log in**.

   On the Agfa Web Services: Healthcheck page, all web services are listed with a status of Passed or Failed.

5. To determine what the problem is for any web services with the status Failed, review the **Comments**.

6. To check the status of the web services again, in Internet Explorer, click **Refresh**.

2. Configuring the Audit Record Repository database connection

After installing or upgrading the database and adding an Audit Record Repository (an audit server such as Audit Manager), you must update certain entries in the database to ensure that auditing functions correctly. If not using an Audit Record Repository, this task is not required.

To configure the Audit Record Repository database connection

1. On the Database Server, open a command prompt or terminal window.
2. Change to the **C:\mvf\bin** (AS300) or **/usr/mvf/bin** (AS3000) directory.
3. Type **clui**.
4. To check if the entry already exists in the database, type

   select * from map_ini where ini_key='ARR_INSTALLED' and ini_section='MAP_EVENT'
5. If the entry exists, update the entry by typing

   update map_ini set ini_value='T' where ini_key='ARR_INSTALLED' and ini_section='MAP_EVENT'

   or

   If the entry does not exist, insert it by typing:

   insert into map_ini (ini_section,ini_key,ini_value) values ('MAP_EVENT','ARR_INSTALLED','T')

The Application Server must also be connected to the Audit Record Repository. For details, refer to "Connecting to the audit server" in the *IMPAX 6.4 Application Server Installation and Configuration Guide*.

3. Upgrading the Curator

All dedicated Curator stations need upgrading. Upgrade the master Curator first, by uninstalling the existing IMPAX software, then installing the IMPAX 6.4 AS300 software with the MVFCore, possibly MVFCache, MVFCurator, and MVFcdexport packages selected. Then upgrade all slave Curators in much the same way, except that the MVFcdexport packages only has to be included on one of the slave Curators.

Uninstalling the previous IMPAX software packages

If you are upgrading an existing server, before installing the IMPAX 6.4 AS300 server packages, uninstall the previous-version IMPAX packages.

To uninstall the previous IMPAX software packages

1. Open Control Panel.
2. Select **Add or Remove Programs**.

3. Under Currently installed programs, select **Agfa IMPAX 6.2** *version* or **Agfa IMPAX 6.3** *version* .
4. Click **Change/Remove**.
5. When prompted, type your name (minimum three characters).
6. In the Confirmation dialog, click **OK**.
7. In the Maintenance Complete dialog, select **Yes, I want to restart my computer now**, then click **Finish**.

When the server restarts, log into Windows as an administrator-level user.

Installing the Curator and CD Export server software

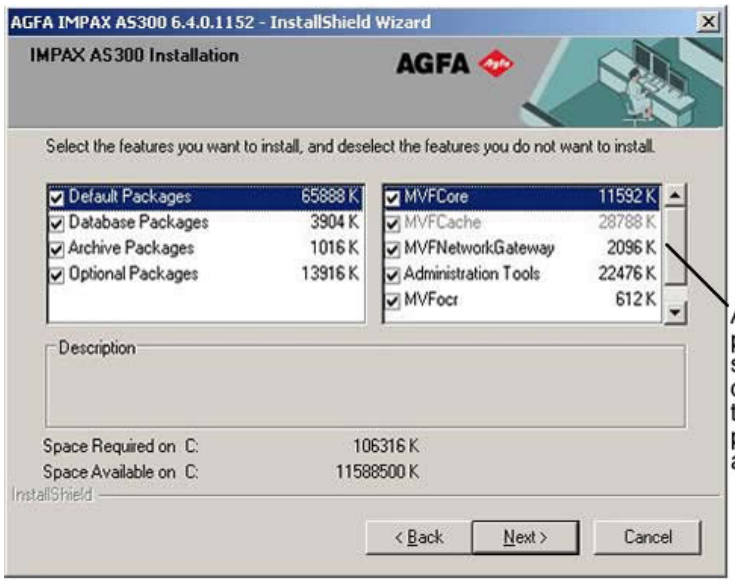
To install IMPAX AS300 software, you must be logged into Windows as an administrator-level user.

You can now install the AS300 software with the appropriate packages. If installing multiple Curators, install and configure the master Curator before installing the secondary ones.

To install the Curator and CD Export server software

1. Insert the IMPAX AS300 CD.
2. Navigate to D:\programs\mvf and double-click **as300-installer.exe**.
3. Type your name (minimum three characters).

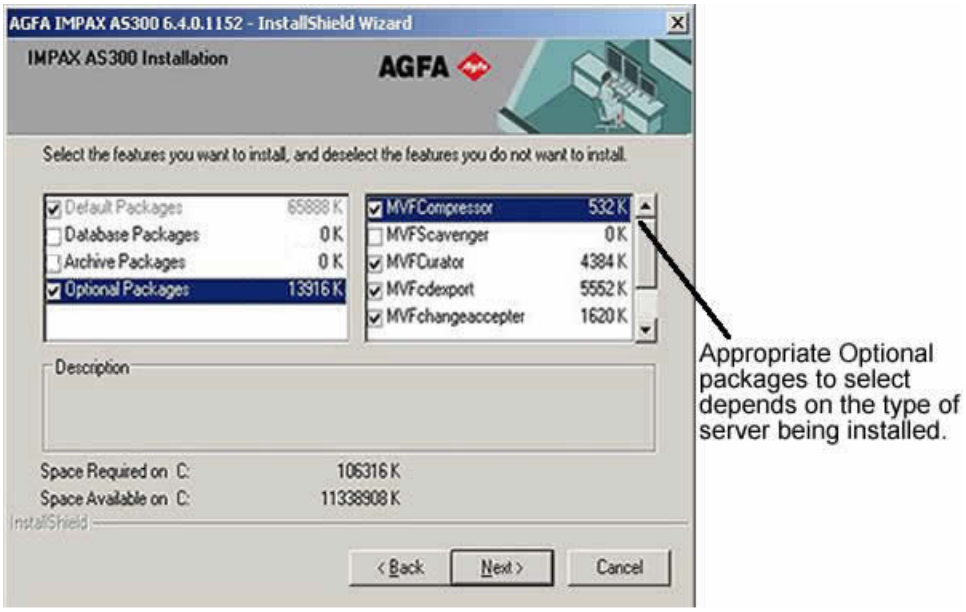
   This information is recorded in the installer log file.
4. On the Welcome screen, click **Next**.
5. On the Select Components screen, all default packages are selected by default. Clear the checkboxes of all packages other than **MVFCore**.


AGFA IMPAX AS300 6.4.0.1152 - InstallShield Wizard
IMPAX AS300 Installation
AGFA
Select the features you want to install, and deselect the features you do not want to install.
Default Packages 65888 K
Database Packages 3904 K
Archive Packages 1016 K
Optional Packages 13916 K
MVFCore 11592 K
MVFCache 28788 K
MVFNetworkGateway 2096 K
Administration Tools 22476 K
MVFocr 612 K
Description
Space Required on C: 106316 K
Space Available on C: 11588500 K
InstallShield
< Back
Next >
Cancel
All default packages are selected by default. Clear the default packages that are not required.

6. Clear the **Database Packages** checkbox.
7. Clear the **Archive Packages** checkbox.

8. Select the **Optional Packages** label and select the appropriate packages. **MVFCurator** must stay selected. **MVFcdexport** is also required except, perhaps, on slave Curators.

   Normally, no other optional packages are required, so you can clear other selected checkboxes. In particular, clear the **MVFchangeacceptor** checkbox and do **not** select the **MVForadg** checkbox.


AGFA IMPAX AS300 6.4.0.1152 - InstallShield Wizard
IMPAX AS300 Installation
AGFA
Select the features you want to install, and deselect the features you do not want to install.
Default Packages 65888 K
Database Packages 0 K
Archive Packages 0 K
Optional Packages 13916 K
MVFCompressor 532 K
MVFScavenger 0 K
MVFCurator 4384 K
MVFcdexport 5552 K
MVFchangeaccepter 1620 K
Description
Space Required on C: 106316 K
Space Available on C: 11338908 K
InstallShield
< Back
Next >
Cancel
Appropriate Optional packages to select depends on the type of server being installed.

9. Browse to the location of the portable password file and click **OK**.
10. Type the temporary password used to create the portable password file and click **OK**.

    The mvf.psd file is imported under C:\mvf.
11. On the Summary screen, click **Next**.

    The files are copied.
12. After all the packages have been installed, to close the installation wizard and restart the system, click **Yes, I want to restart my computer now**.

    If you are not prompted to restart the computer, manually restart it.

When the server restarts, log into Windows as an administrator-level user.

4. Disabling support for cc conflict jobs

When IMPAX 6.4 is installed or upgraded, issues can arise due to the creation of cc conflict jobs (related to the processing of Change Context or cc objects). To prevent these issues, you must disable support for these jobs.

To disable support for cc conflict jobs

1. Log into the Database Server.
2. Launch CLUI.
3. To change the setting for the creation of cc conflict jobs, type

UPDATE mvf_ts_config SET execution_time = 'NEVER' WHERE module_name = 'CREATE_CC_CONFLICT_JOB'

4. To refresh cached data, type

   UPDATE map_ref_count SET ref_count = ref_count + 1 WHERE name = 'DATABASE_UPDATE_REF'

5. Disabling tx object creation

Important!

This topic applies only when the IMPAX site archives to an IMPAX Data Center.

When IMPAX 6.4 is installed or upgraded, issues can arise due to the creation of Transaction or tx objects (DICOM objects used to synchronize status changes across multiple IMPAX clusters). To prevent these issues, you must disable support for these objects.

To disable tx object creation in an IMPAX Oracle database

1. Log in as the **oracle** user (Solaris) or as the **AgfaService** user (Windows).
2. On Solaris, copy **dosr.trigsql.oracle** as **/usr/mvf/etc/dosr.trigsql.oracle.MIS101670**.

   or

   On Windows, copy **dosr.trigsql.sqlserver** as **c:\mvf\etc\dosr.trigsql.oracle.MIS101670**.
3. Log into SQLPlus as the **dbadmin** user.
4. On Solaris, type **@/usr/mvf/etc/dosr.trigsql.oracle.MIS101670**.

   or

   On Windows, type **@c:\mvf\etc\dosr.trigsql.oracle.MIS101670**.
5. Type **quit**.
6. Type **regrant-oracle** (Solaris) or **bash regrant-oracle** (Windows).

To disable tx object creation in an IMPAX SQL Server database

1. Log in as the **AgfaService** user.
2. Copy **dosr.trigsql.sqlserver** as **c:\mvf\etc\dosr.trigsql.sqlserver.MIS101670**.
3. In SQL Server, using a tool such as Query Analyzer or Management Studio, open the **C:\mvf\etc\dosr.trigsql.sqlserver.MIS101670** file.
4. Click **Execute**.
5. In Query Analyzer or Management Studio, run **sp_grant_permission**.

6. Changing the SQL Server administrator (sa) password

Important!

This topic applies only to Database Servers (including single-host, standalone, and single-server configurations).

The IMPAX installation changes the default sa password to a randomly generated string of characters. This greatly increases the security of the system; however, the password can still be obtained through other methods.

To ensure that your system is as secure as possible, we recommend updating the sa password to a strong password that is known only by the site administrator.

Note:

Do this only after the Application Server software has been installed and configured.

To change the SQL Server administrator password

1. On an IMPAX Database Server, log in using the AgfaService account.
2. Open a command prompt.
3. Change to the **C:\mvf\bin** directory.
4. To find out what the current sa password is, type

   passkey -M QUERY -u sa -r c:\mvf\mvf.psd
5. To update the password, type

   sqlcmd -U sa -P *password* **-d master -Q** "*sp_password* '*old_password*'**,** '*new_password*'**,** '**sa**'"

   A message indicates that the password was changed.
6. To log out, type **exit**.

7. Upgrading Clients to IMPAX 6.4

IMPAX Clients, both local and remote, are used to view study images. The Client software can be installed on any appropriate, networked workstation and be used by anyone who has a valid license. At least one Client should be upgraded to IMPAX 6.4 for migration testing purposes.

Uninstalling the IMPAX 6.2 or later Client software

The following procedure removes the IMPAX Client software but not any integrated software (such as the Orthopaedic Application, TalkStation, or Voxar).

To uninstall the IMPAX 6.2 or later Client software

1. If running, log out of the IMPAX Client and close the Login window.
2. Open Control Panel.
3. Select **Add or Remove Programs**.
4. Under Currently installed programs, select **AGFA IMPAX Client** *build_number* .
5. Click **Remove**.
6. When asked to confirm the removal, click **Yes**.

   A Preparing to remove dialog opens, then the IMPAX Client software is uninstalled.

Installing the IMPAX Client

This following explains how to install IMPAX Client using the default InstallShield package. An alternative is to automate the installation through a batch file or software distribution tool. For instructions on installing IMPAX Client that way, refer to " Enabling automated installation of the IMPAX Client" in the *IMPAX 6.4 Client Installation, Upgrade, and Configuration Guide* or the *Pre-Migration Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.4*.

Note:

To install the IMPAX Client, you do *not* have to be logged in as a Windows administrator.

To install the IMPAX Client

1. From the IMPAX Client CD or the IMPAX Client Installation web page (https://*install_server_name*/clientinstaller/*language_code*), start the IMPAX Client installation program, **IMPAXClientSetup.exe**.
2. If a File Download dialog appears, click **Open** or **Run**.

   A Preparing to Install message appears.
3. If a prompt appears about downloading and installing missing components, click **OK**.
4. Follow the prompts to download and install MDAC 2.8, Microsoft .NET Framework 1.1, Microsoft .NET Framework 1.1 SP1, Microsoft .NET Framework 1.1 Hotfix, or all.

   Note:

   After installing a component, the installer may stop running or you may receive an "Installation is not yet complete" message. In either case, rerun the IMPAXClientSetup.exe program.

   Depending on network speed, downloading and installing the Microsoft .NET Framework can take over 30 minutes.

   For the MDAC install, after the download, accept the license agreement, click **Next**, and then click **Finish**.

   For the .NET Framework 1.1 install, after the download, agree to the installation, accept the license agreement, and click **OK** after installation is complete. If prompted, restart the computer.

Note:

If you do not have a live Internet connection, the downloading will not work. Instead, install the Microsoft .NET Framework 1.1 and MDAC 2.8 from the Client Installer server (https://*install_server_name*/clientinstaller/redist/dotnetfx.exe and mdac_typ.exe).

For the .NET Framework 1.1 SP1 install, after the download, if prompted to start the installation, click **OK**. If prompted, restart the computer.

For the Hotfix install, after the download, if prompted to start the installation, click **OK**. If prompted, restart the computer.

5. On the Welcome to the InstallShield Wizard for IMPAX Client screen, click **Next**.
6. On the License Agreement screen, read the license agreement. If you agree, select **I accept the terms in the license agreement**. Click **Next**.
7. If this copy of IMPAX Client is to be used by only one user on this computer, type that user's Windows User Name. Type the Organization name. Select **Only for me**. Click **Next**.

   or

   If this copy of IMPAX Client is to be used by anyone who has a valid IMPAX user ID and password, in the User Name and Organization fields, type appropriate values. Ensure that **Anyone who uses this computer (all users)** is selected. Click **Next**.
8. To install the application into C:\Program Files\Agfa\IMPAX Client, on the Destination Folder screen, click **Next**.

   or

   To install the application to another location, click **Change**. In the Change Current Destination Folder dialog, browse for the directory location to install into and click **OK**. On the Destination Folder screen, click **Next**.
9. On the IMPAX Application Server screen, in the Get or confirm application server name field, type the fully qualified domain name of the Application Server to use. Click **Next**.

   A *fully qualified domain name* is the full name of a system, including its local host name and complete domain name. For example, if the Application Server is called *radserver*, it is on the network domain called *radnet*, and radnet is within the *healthorg.com* domain, the name to type would be *radserver.radnet.healthorg.com*.
10. On the IMPAX Login Type screen, select the appropriate authentication method: Windows, IMPAX, or Smart Card.
    - **Windows Authentication**—Logs into the IMPAX Client automatically after logging into Windows or logging in with a Windows smart card.
    - **IMPAX Authentication**—Logs into the IMPAX Client separately from Windows. (If unsure of which option to select, use **IMPAX Authentication**.)
    - **Smart Card Authentication**—Logs into the IMPAX Client with a smart card in the **National Health Service (NHS) environment only**.
11. Click **Next**.
12. On the Ready to Install the Program screen, click **Install**.

    The Installing IMPAX Client screen appears as the program is installed.

13. On the InstallShield Wizard Completed screen, click **Finish**.

The IMPAX Client software is installed. You do *not* have to restart the computer.

8. Restarting antivirus software

If you have antivirus software installed and have halted any scan jobs, restart the antivirus services.

To restart antivirus software

1. On a Windows server where scanning was stopped, launch the antivirus software.
2. Start the scan operation according to the vendor's instructions.

Post-migration checking and stabilization

6

Some tasks are performed after the 6.4 migration is complete.

1. Testing the installed software

After installing the new version of IMPAX, perform certain tests to verify that the installation was successful.

To test the installed software

1. On the IMPAX Database Server, run the Administration Tools and ensure that you can log in using the administration password.
2. On the Application Server, open a web browser and connect to http://localhost. Ensure that the "Welcome to IMPAX" page is displayed.
3. Run the IMPAX Client and ensure that you can log in using the administration password.

2. Restarting the archive queue

Restart the Archive queue that was halted before the IMPAX upgrade.

To restart the archive queue

1. Log into the IMPAX 6.4 Administration Tools.
2. On the Daily tab, select **Job Manager**.
3. In the queue list, select the archive queue.
4. Click **Restart**.

3. Restarting Connectivity Manager queues

If Connectivity Manager is currently deployed, and you have stopped any queues, use the Queue Manager to restart them. Messages in a queue that is stopped are not processed and sit in the queue. Once the queue is restarted, messages are processed.

To restart Connectivity Manager queues

1. In the Connectivity Manager Service Tools, click **Queue Manager**.
2. In the Queue List table, select the checkbox beside the queue of any system device or real world device with a *DM Out* or *impax_report_server* Component. (The Status of the queue should be Stopped.)
3. Click **start**.

   The Status of the queue changes to Started.

4. Taking a post-migration system snapshot

After migrating to IMPAX 6.4, use the migration_inventory tool to capture the state of the system to compare it with the previous IMPAX system. Perform this task on any computer on which the Migration Tools have been installed that can access the 6.4 Database Server.

To take a post-migration system snapshot

1. In a command prompt or terminal window, change to the directory containing the migration_inventory tool.
2. On a Windows server, type

   migration_inventory -s -d *database_name* **-U** *database_user_name* **-P** *database_password* **-D** *database_server_host_name*

   On a Solaris server, type

   ./migration_inventory -s -d *database_name* **-U** *database_user_name* **-P** *database_password* **-D** *database_server_host_name*

   The output is stored in the migration_info table. It lists the number of IMPAX studies, total objects, and objects in cache. It also lists all IMPAX source stations and DICOM printers.
3. To create a report file with this information, in Windows, type

   mig_reporter -t system_inventory_tool

   In Solaris, type

   ./mig-reporter -t system_inventory_tool

This command writes the output of the migration_inventory command to a report file in the /usr/mvf-mig6/reports or C:\mvf\mig6 directory. (For other parameters you can use with this command, refer to the appropriate version of the *IMPAX Pre-Migration Guide*.)

5. Comparing pre- and post-migration snapshots

Open the report file that contains the pre- and post-migration snapshot information. Compare the pre- and post-migration information. Ensure that all expected studies, objects, stations, and DICOM printers are still listed.

6. Synchronizing clocks on Windows-based IMPAX systems

If the system time on the Application Server and the image server (ASPFTP server) differs, the authentication tickets provided by the IMPAX Client are rejected by the ASPFTP server and image retrieval fails. You must configure the IMPAX systems to automatically synchronize their system time with a common server and remain synchronized.

Note:

Also ensure that the time zone for the computer is set correctly.

The instructions that follow use the synchronization feature built into the operating system. When configured, Windows Time Service sets and synchronizes the system time with a standard time server.

Allowing time synchronization on a hardened IMPAX system

In IMPAX 6.4, the default hardening security policy blocks UDP on port 123, which is required for time synchronization. Before setting up time synchronization for IMPAX, complete the following procedure if you have a hardened IMPAX system that blocks UDP on port 123.

To allow time synchronization on a hardened IMPAX system

1. Open the Windows Administrative Tools and select **Local Security Settings**.
2. Expand the **IP Security Policies on Local Computer** option, right-click **Impax Server Policy**, and select **Properties**.
3. Clear the **Use Add Wizard** checkbox.
4. Click **Add**.
5. In the New Rule Properties dialog, click **Add**.
6. Type a name and description for the filter in the appropriate fields. Click **Add**.

   For example, type **IMPAX Allow Time Synch** in the Name field and **Allow time sync over UDP port 123** in the Description field.
7. On the Address tab of the IP Filter Properties dialog, keep the defaults.
8. Switch to the **Protocol** tab.
9. From the Select a protocol type list, select **UDP** and in the To this port field, type **123**. Click **OK**.
10. In the IP Filter list dialog, click **OK**.
11. In the New Rule Properties dialog, select the new rule and switch to the **Filter Action** tab.

12. Select **Impax Permit Action** and click **Apply**. Click **Close**.
13. In the Impax Server Policy Properties dialog, scroll down and verify that you see the Time Synch policy. Click **OK**.

Synchronizing a Windows 2003 server to an external time source

Synchronize the Windows 2003 servers on your network to an external time source to ensure that image data streaming operates correctly.

CAUTION!

Serious problems might occur if you modify the registry incorrectly. These problems might require that you reinstall your operation system and there is no guarantee that these problems can be solved. We recommend that you back up the registry before you change it, so that you can back out of the changes if necessary.

To synchronize a Windows 2003 server to an external time source

1. To open Registry Editor, select **Start** > **Run**, type **regedit**, and click **OK**.
2. To change the synchronization server to NTP, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Parameters\Type** subkey, change the REG_SZ value from NT5DS to **NTP**.
3. To specify if the local machine is a local time server, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Config\AnnounceFlags** subkey, change the REG_DWORD value to **5**.
4. To enable the NTPServer, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\TimeProviders\NtpServer\Enabled** subkey, change the REG_DWORD value to **1**.
5. To specify where the computer obtains time stamps, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Parameters\NtpServer** subkey, enter the list of DNS names or IP addresses.

   If you use DNS names, append **,0x1** to the end of each DNS name.
6. To set the poll interval, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\TimeProviders\NtpClient\SpecialPollInterval** subkey, change the REG_DWORD value to the number of seconds between each poll.

   The recommended value is **900** Base **Decimal**, which polls the time server every 15 minutes.
7. To specify the maximum positive difference that triggers a synchronization, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Config\MaxPosPhaseCorrection** subkey, change the REG_DWORD value to the maximum number of seconds.

   The recommended value is **3600** Base **Decimal**.
8. Similarly, to specify the maximum negative difference that triggers a synchronization, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Config\MaxNegPhaseCorrection** subkey, change the REG_DWORD value to the maximum number of seconds.

9. Exit the Registry Editor.
10. To stop and restart the Windows Time server, at a command prompt, type **net stop w32time && net start w32time**.

    It may take up to an hour for this to take effect.

For more information, refer to the Microsoft Knowledge Base article KB 816042.

Synchronizing a Windows 2003 server to an internal time source

Synchronize the Windows 2003 servers on your network to ensure that image data streaming operates correctly. To configure the Primary Domain Controller (PDC) master without using an external time source, change the announce flag on the PDC master. Choose either the Application Server or the AS300 server as the PDC master and synch the other servers to it.

CAUTION!

Serious problems might occur if you modify the registry incorrectly. These problems might require that you reinstall your operation system and there is no guarantee that these problems can be solved. We recommend that you back up the registry before you change it, so that you can back out of the changes if necessary.

To synchronize a Windows 2003 server to an internal time source

1. To open Registry Editor, select **Start** > **Run**, type **regedit**, and click **OK**.
2. To specify if the local machine is a local time server, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Config\AnnounceFlags** subkey, change **REG_DWORD** to **A**.
3. Exit the Registry Editor.
4. To stop and restart the Windows Time server, at a command prompt, type **net stop w32time && net start w32time**.

   It may take some time for this to take effect.

Note:

The PDC master must not be configured to synchronize with itself.

Synchronizing with a time server when the IMPAX computer is not a member of a domain

To ensure that image data streaming operates correctly when the IMPAX computer is not a member of a domain, use the synchronization feature built into the operating system.

To synchronize with a time server when the IMPAX computer is not a member of a domain

1. Open Control Panel.

2. Select **Date and Time**.
3. Switch to the **Server Internet Time** tab.
4. In the list, type or select the time server to synchronize with.

Synchronizing with a time server when the IMPAX computer is a member of a domain

To ensure that image data streaming operates correctly when the IMPAX computer is a member of a domain, use the synchronization feature built into the operating system.

To synchronize with a time server when the IMPAX computer is a member of a domain

1. Open a command prompt.
2. Type

   w32tm /config /syncfromflags:manual /manualpeerlist:*time_server*

   where *time_server* is the DSN name or IP address of the time server. The *time_server* can be any Windows- or Solaris-based server.
3. To update Windows Time Service to use the new configuration, type

   w32tm /config /update
4. To synchronize the clock, type

   w32tm /resync

7. Installing the PSARMT and cache tools on a Windows server

For this install, you must be logged into Windows as an administrator-level user.

The PSARMT and cache tools are on the IMPAX AS300 CD. PSARMT is used with external PACS to mark studies as PACS archived. The cache check and repair tools detect and correct IMPAX cache corruption.

To install the PSARMT and cache tools on a Windows server

1. Insert the IMPAX AS300 CD.
2. Navigate to the programs\mvf directory and double-click **mvfcachecheck-impax_ main_build***xx***.exe** (cache check and repair tools).
3. On the Welcome screen, click **Next**.
4. On the Setup Complete screen, click **Finish**.

   The tools are installed in the C:\mvf directory.
5. Navigate to the programs\mvf directory and double-click **mvfpsarmt-impax_ main_build***xx***.exe** (PSARMT Migration Tools).
6. On the Welcome screen, click **Next**.
7. On the Setup Complete screen, click **Finish**.

   The tools are installed in the C:\mvf directory.

8. Remove the IMPAX AS300 CD.

8. Running PSARMT to mark studies as PACS archived

Note:

If the site does not use an external PACS, you can skip this topic.

The PACS Store and Remember Migration Tools enable a site to migrate from an external PACS system to IMPAX by allowing the external system to act as an archive server to IMPAX.

Run these commands on the migrated IMPAX Database Server.

For more information regarding the configuration and execution of the PSARMT Migration Tools, refer to the PSARMT readme document that can be found in the C:\mvf-mig6 directory.

To run PSARMT to mark studies from an external PACS as PACS archived

1. Navigate to the C:\mvf directory.
2. Build the PSARMT database tables by running **build-mvf-psarmt-database.bat**.
3. Install the PSARMT Tools as services by running **install_psarmt.bat**.
4. Specify the migration configuration by running **mvf_psarmt_config_manager.exe**.

   Parameters are as follows:

   - **-C** *configuration_file_with_all_parameters* —Default is installed as mvf-psarmt.cfg. The attributes of this file are described in the PSARMT readme document.
   - **-R** *study_status* —Retries studies with the given status for migration. Possible *study_status* values are conflict (**C**), error (**E**), and unknown (**U**). To retry all at once, specify **-R EUC**.
   - **-A {STOP | RESTART | KILL}**—Performs the specified action command.
5. Start the PSARMT services by running **start_psarmt.bat**.
6. Perform the migration, based on the configuration defined in step 4, by running **mvf_psarmt.exe**.

At some later date, when studies are retrieved from the PACS, update the missing information in the database from incoming study object by running **mvf_study_fixer.exe**.

Once the migration is complete and all studies have been fixed by the Study Fixer tool—this may be several months later—the PSARMT services halt automatically. If you want to remove the PSARMT Tools as services, on Windows, run **remove_psarmt.bat**.

9. Detecting and correcting IMPAX cache corruption

The Cache Check and Repair Tools are used to identify missing cache files and to repair or remove damaged ones. These tools are normally run across all of the cache file systems on the affected server, because files missing from a damaged cache can sometimes be found on another cache. Performance of the tools is hardware-dependent.

Checking the integrity and identity of cache files against the IMPAX AS300 database

You can use the cache check and repair tools to check the integrity and identity of cache files against the IMPAX AS300 database.

To check the integrity and identity of cache files against the IMPAX database

1. In a command prompt, change to the location of the cache check and repair tools.
2. Run **mvf-check-cache** *parameters path_to_cache*

   where *parameters* can be one or more of the following:

   - **-i** *seconds* —Interval between display of progress messages. Default is every 10 seconds.
   - **-g**—Gentle cache check. Causes the tool to sleep every other second (and take twice as long).
   - **-m** *mv_command_file* —Path to the script of the mv commands that move problem files out of the cache directory and to a set of sibling directories on the same file system. Do not run this script on a damaged file system.
   - **-q**—A quick check of file existence only, and a simple file size sanity check. Cannot be used with the -m parameter.

A report and additional diagnostic messages are written to the log file.

For example:

mvf-check-cache -q /cache3/mvfcache

Finding files in a cache directory that are unknown to the database

Files in the cache directory that contain invalid file name formats or are not registered in the database must be identified and possibly moved to another location.

To find files in a cache directory that are unknown to the database

1. Run **mvf-clean-cache** *parameters path_to_cache*

   where *parameters* can be one or more of the following:

   - **-i** *seconds* —Interval between display of progress messages on stderr. Default is every 10 seconds.
   - **-g**—Gentle cache check. Causes the tool to sleep every other second (and take twice as long).
   - **-m** *mv_command_file* —Path to the script of the mv commands that move problem files out of the cache directory and to a set of sibling directories on the same file system. Do not run this script on a damaged file system.
   - **-v**—Increased verbosity. Causes all progress and report messages to be prepended by the current date and time.

A report and additional diagnostic messages are written to the log file.

For example, run:

mvf-clean-cache -m move_cmds.sh /cache4/mvfcache

Moving images from a cache directory

You can move the images identified by the *mv_command_file*, used to identify problem files.

To move images from a cache directory

1. Run the *mv_command_file* .

For example, run **move_cmnds.bat**.

Generating a report of lost images

This procedure is designed to be run on a server that has suffered damage to one or more cache file systems. This procedure generates a report of studies that contain DICOM object files that have been lost from a server's cache and deregisters the missing files from the database.

To generate a report of lost images

1. Run **mvf-report-loss** *parameters report_file_name*

   where *parameters* can be one or more of the following:

   - **-i** *seconds* —Interval between display of progress messages on stderr. Default is every 10 seconds.
   - **-g**—Gentle cache check. Causes tool to sleep every other second (and take twice as long).
   - **-r**—Run in deregister mode, changing the visible field values from 'C' to 'F' and permanently deleting all database locations for missing files. This action cannot be undone. It has no effect if the tool has never been run in marking mode.

Note:

If you omit the -r parameter, the tool runs in marking mode and checks all of the caches on the local server. If a file is missing, the visible field on the osr_location table is set to 'C', effectively making the file location "invisible". If a tool is rerun and files have since been restored to cache, the visible field values are set back to "T". This is a default mode.

For example:

mvf-report-loss loss-report.txt

IMPAX system consistency is restored by deregistering missing cache files from the database.

10. Uninstalling the IMPAX Migration Tools from a Windows computer

Once all migration tasks and post-migration checks are completed, you must uninstall the IMPAX Migration Tools from all Windows-based computers on which they are installed. This is a legal requirement.

To uninstall the IMPAX Migration Tools from a Windows computer

1. Open Control Panel.
2. Select **Add or Remove Programs**.
3. Under Currently installed programs, select **IMPAX 6.4 AS300 Migration vimpax-migration_main_build***xxx*

   where *xxx* is the build number.
4. Click **Change/Remove**.
5. In the Confirm File Deletion dialog, click **Yes**.
6. At the Uninstall complete prompt, click **OK**.

11. Uninstalling the Cross-Cluster Dictation Interlock tool

If no longer having to synchronize the dictation status of studies between the 5.2 or 5.3 and the 6.4 IMPAX systems, you can uninstall the components of the Cross-Cluster Dictation Interlock tool.

To uninstall the Cross-Cluster Dictation Interlock tool

1. On the IMPAX 6.2 or 6.3 Application Server where the 6.2 or 6.3 Cross-Cluster Dictation Interlock components were installed, open the Windows Administrative Tools and select **Services**.
2. Right-click the **Impax Study Status Relay** service and select **Stop**.
3. Close the Services window by selecting **File** > **Exit**.
4. Open a command prompt.
5. Change to the directory containing the Cross-Cluster Dictation Interlock components—possibly C:\Program Files\Agfa\Impax Business Services.
6. Type **uninstall_study_status_relay_service.bat**.
7. Close the command prompt by typing **exit**.
8. From Windows Explorer, navigate to and delete the **study-status-signal-relay** folder (possibly from C:\Program Files\Agfa\Impax Business Service).
9. On the IMPAX 6.4 Application Server where the 6.4 Cross-Cluster Dictation Interlock components were copied, follow steps 1 to 7.
10. Log into an IMPAX 6.2 or 6.3 Client as an administrator user.
11. From the Configure area - Users and Roles section, delete the **remote-dictation** user from the Study Status Relay role, then delete the **Study Status Relay** role.

12. Log into an IMPAX 6.4 Client as an administrator user and follow step 11 on it.

All components of the Cross-Cluster Dictation Interlock tool are now removed.

Troubleshooting IMPAX A

As you install or upgrade IMPAX servers, you may encounter various installation and configuration problems.

Troubleshooting: IMPAX Client slow and erratic post-upgrade

Issue

After upgrading, IMPAX Client display is very slow at a site using McAfee Antivirus software.

Details

A McAfee Antivirus setting called Buffer Overflow Protection (BOP) can cause this behavior.

Solution

Disable BOP in McAfee. Alternatively, use McAfee EPO or Protection Pilot to reconfigure the BOP to run only at fixed intervals, such as every five minutes.

Troubleshooting: Must back out of the Application Server upgrade

Issue

A problem has occurred and I must return to the previous version of the Application Server software.

Solution

To back out of the Application Server upgrade

1. Back up the web.config files and note the location of the current web.config files.
2. On the Application Server, open Control Panel.
3. Select **Add or Remove Programs**.
4. Remove **AGFA IMPAX Business Services** and **IMPAX Installation Server**.

   Do not remove ADAM.
5. Install the IMPAX 6.2 or 6.3 version of the Server, Application Server, and Client Installation Server software.

Note:

By installing an earlier version of the Client Installation Server, the Client workstation software is automatically rolled back within an hour for online workstations.

Troubleshooting: How do I determine which users are ADAM administrators?

Issue

How do I determine which users are ADAM administrators?

Solution

If the site uses other dedicated Application Servers, you can determine which users on the Application Servers are ADAM administrators:

1. On an Application Server, select **Start** > **All Programs** > **ADAM** > **ADAM ADSI Edit**.
2. Select **Well-known naming context** and select **Configuration** from the list.
3. Click **OK**.

   If this step fails, you are not logged into the Application Server as an ADAM administrator. Log in as the user who originally installed ADAM or who has been added as an ADAM administrator and try these steps again.
4. Expand the new Configuration node and select **CN=Configuration** > **CN=Roles**.
5. Double-click **CN=Administrators**.
6. Double-click the **member** attribute.

   The ADAM administrators are listed by login name.

Troubleshooting: How do I determine which ADAM instance is the Schema Master?

Issue

How do I determine which ADAM instance is the Schema Master?

Solution

If the site uses other dedicated Application Servers, you can determine which one is running the master ADAM instance to find out which is the Schema Master:

1. Select **Start** > **Run** and type **mmc**.
2. In the Console dialog, select **File** > **Add/Remove Snap-in**.
3. In the Add/Remove Snap-in dialog, click **Add**.
4. From the Snap-in list, select **ADAM Schema** and click **Add**.
5. To close the Add Standalone Snap-in dialog, click **Close**.
6. To close the Add/Remove Snap-in dialog, click **OK**.
7. Right-click ADAM Schema and select **Change ADAM Server**.
8. In the Connect to ADAM Server dialog, enter localhost as the ADAM server and add the port, usually 389.
9. Select This Account and select a user that is an ADAM Administrator from the list.
10. Click **OK**.
11. Right-click ADAM Schema and select **Operations Master**.

    The current Schema Master is listed in the dialog. This is the Application Server on which to upgrade the ADAM database.

Cache check tools reference

B

IMPAX 6.4 includes four tools designed to ensure the integrity of the IMPAX cache directory. These tools check the cache directory, repair the cache directory, and then provide a 'Loss Report' for files missing from the cache.

mvf-check-cache

This command checks that all the DICOM object files registered in the database for a particular cache volume actually exists in the cache. It also does a sanity check to determine whether the files are correct by comparing the sop_instance_uid to the value in the database. A report giving precise details of the problems found is produced and written to the log file. Optionally, a move-cmds.sh file is created to move the problematic files out of the cache. Files in the cache that do not have locations registered in the database are not detected by mvf-check-cache.

If there are multiple caches, the path name of the cache to be checked must be specified. Memory usage may be high if there are a large number of files, but mvf-check-cache displays the amount of memory required so that the operator can add more virtual memory if needed

Performance of mvf-check-cache is hardware dependant. For example, on a Sunfire 280R, mvf-check-cache can check about 130 files per second. With the quick check option enabled (checking only file existence and file size), about 30,000 files per second can be checked.

mvf-clean-cache

This command scans an IMPAX cache directory containing DICOM object files and generates a report of files that do not belong there, either because the file name format is invalid or because this location for the object file is not registered in the database. While working, it writes messages to the stderr stream to keep the tool operator informed of its progress. The path name of the cache to be scanned is specified on the command line. mvf-clean-cache begins by querying the database for the list of ordinals for the files in the cache. It keeps this list in memory. If there is a large number of files, memory usage

may be high but mvf-clean-cache displays the amount of memory required and the operator can add more virtual memory if necessary.

mvf-clean-cache does not access the contents of the cache files. It works by examining the file names and reporting the problem. A copy of the report and additional diagnostic messages are written to the log file. Since mvf-clean-cache may be run on a live system, new files (less than one hour old) are skipped. Thus, temporary files created by the SCP are ignored.

Performance of mvf-clean-cache is hardware dependent. For comparison, on a Sunfire 280R, mvf-clean-cache can check approximately 50,000 files per second

mvf-ddo-rescue

This command takes any number of files and directory arguments to determine whether they are DICOM objects. If the argument is a directory, it analyzes all the files in that directory and recursively analyzes all files in all subdirectories. If a file is a DICOM object, then mvf-ddo-rescue determines whether the DICOM object is damaged. If it is undamaged, then mvf-ddo-rescue attempts to find the object in the database. If the object is found in the database, mvf-ddo-rescue checks for a local cache location for the object. If a local cache location is found, then mvf-ddo-rescue compares the DICOM object file with the DICOM object file in the cache to see whether:

1. The cache file is missing
2. The cache file is a duplicate

   or
3. The cache file is different

If a problem exists, mvf-ddo-rescue attempts to give precise details. A copy of the report and additional diagnostic messages are written to the log file.

Performance of mvf-ddo-rescue is hardware dependent. For example, on a Sunfire 280R, mvf-ddo-rescue can analyze about 40 files per second. Performance also depends on how many files must be identified by searching the original_sop_instance_uid field in the database.

mvf-report-loss

After repairs have been performed by mvf-check-cache (refer to page 69) mvf-clean-cache (refer to page 69), and mvf-ddo-rescue (refer to page 70), mvf-report-loss is used to perform the last two steps of the repair process:

1. It determines what cache files have been lost and generates a "Loss Report" for the customer. The body of the report contains one line for each study affected and the report is sorted by patient name and study date.
2. It unregisters the missing cache files from the database, preventing display, transmit, and archive errors that are caused when the product tries to access files that are missing from the cache.

mvf-report-loss has two corresponding modes of operation:

Marking mode

The default mode for the tool. In marking mode, the tool checks all the caches on the local server for the presence of the DICOM object files that the database says should be present. For missing files, the "visible" field in the database osr_location table is set to 'C'. (Normally this field contains the value 'T' for true, or 'F' for false). Changing this field makes these file locations invisible to the product software.

The reporting tool may be rerun after further recovery work has been completed (more files restored to cache). In these cases the tool also checks locations with visible value 'C'. If any files have been restored to cache since the last run of the tool, it sets those locations' visible values back to 'T' to indicate that they are now valid.

After the missing DICOM object file locations are marked, a report is generated for the studies that contain lost objects. Each comma-delimited line in the report lists the patient name, patient ID, modality, accession number, study description, study date, total number of objects, and number of lost objects for an affected study.

Note:

In the report, any commas in these fields are replaced by a semicolon.

Deregister mode (-r)

In deregister mode, the tool changes the 'C' values to 'F'. This triggers the Autopilot program to permanently delete these locations from the database. (This is a normal Autopilot function). Please note that there is **no undo**.

Note:

Before running the tool in deregister mode, the operator must check the report to ensure that the losses are as expected. If the report seems to report any files that may not be missing, the tool operator should follow the instructions given in the TROUBLE section. A copy of the report and additional diagnostic messages are written to the log file.

Performance of mvf-report-loss is hardware dependent. For comparison, on a standalone Sunfire 280R, mvf-report-loss scans about 2,000 files per second.

External software licenses

C

Some of the software provided utilizes or includes software components licensed by third parties, who require disclosure of the following information about their copyright interests and/or licensing terms.

Sonic Solutions

Contains AuthorScript™ DVD creation technology licensed from Sonic Solutions®. © 1999-2004 Sonic Solutions. All rights reserved.

Monotype Imaging, Inc. End User License Agreement

Read this license agreement carefully before using your Agfa software product. You may use this Agfa software product only if you agree to the following terms and conditions. If you do not agree to the following terms and conditions, you must not use this Agfa software product. The following are the terms and conditions to which you agree upon when using this Agfa software product:

1. This Agfa software product contains font software which generates typeface designs ("Font Software"). You may not alter Font Software for the purpose of adding any functionality which such Font Software did not have when delivered to you as part of this Agfa software product. You may not embed Font Software into a document which is distributed as a commercial product in exchange for a fee or other consideration. (For example, End-Users shall not embed Font Software into an electronic book that is offered to the public for a fee).
2. This Agfa software product may be used with your computer only and may not be reformatted or decompiled for any purpose. This Agfa software product can only be used for your "Internal Use" and not for resale, sublicensing, or further distribution. As used herein, "Internal Use" shall mean use in the course of your customary and ordinary business. Internal Use shall not include any distribution whatsoever of this Agfa software product or any component thereof except that you may electronically distribute Internal Use documents created by this Agfa software product in a static graphic image or in an embedded electronic document which is distributed in a format that permits only the viewing and printing (and not the editing, altering, enhancing, or modifying)

of such static graphic image or embedded document. Internal Use shall not include any use of this Agfa software product by entities that are neither your authorized employees nor your authorized agents. All such employees and agents shall be notified by you as to the terms and conditions of this End User License Agreement and shall agree to be bound by it. As used herein, "Internal Use" shall occur when an individual is able to give commands (whether by keyboard or otherwise) that are followed by the Font Software, regardless of the location in which the Font Software resides.

3. This Agfa software product may not be used to create any electronic document in which Licensed Type Software is embedded in a document in a format, which may be edited, altered, enhanced, or modified by the recipient of such document.
4. This Agfa software product may not be duplicated or copied except for one copy for archival purposes, program error verification or to replace defective media. All copies must remain in your possession and bear the copyright notices contained on the original except that an archival copy may be placed for safekeeping in the hands of a third party that otherwise has no right to use such copy. All archival copies placed in hands of a third party must contain all proprietary notices set forth on the original Agfa software product.
5. No copies of this Agfa software product may be produced for any purpose other than those purposes expressly permitted in paragraph 2 above.
6. This license does not transfer any right, title, or interest in this Agfa software product to you except as specifically set forth herein. You are on notice that Agfa claims protection of this software product under copyright laws. This Agfa software product may have been developed by an independent third party software supplier, which holds copyright or other proprietary rights to its software product. You may be held responsible by this supplier for any infringement of such rights by you.
7. Agfa reserves the right to terminate this license upon breach. In the event of termination, you will be required to return all copies of this product or provide Agfa with a certificate of destruction of all copies.
8. In the event you modify this Agfa software product or include it in any other software program, upon termination of this license, you agree either to remove the software product or any portion thereof from the modified program and return it to Agfa or to provide Agfa with a certificate of destruction thereof.
9. If this product is acquired under the terms of a (i) GSA contract - use, reproduction or disclosure is subject to the restrictions set forth in the applicable ADP Schedule contract, (ii) DOD contract - use, duplication or disclosure by the Government is subject to the applicable restrictions set forth in DFARS 252.277-7013; (iii) Civilian agency contract - use, reproduction, or disclosure is subject to FAR 52.277-19(a) through (d) and restrictions set forth in the Agreement.

"Monotype" is a trademark of Monotype Imaging, Inc. registered in the U.S. Patent and Trademark Office and elsewhere. All other trademarks are the property of their respective owners.

MI's mailing address is: 500 Unicorn Park Drive, Woburn, MA 01801

The Apache Software License, Version 1.1

Copyright (©) 1999-2000 The Apache Software Foundation. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The end-user documentation included with the redistribution, if any, must include the following acknowledgment:

   "This product includes software developed by the Apache Software Foundation (http://www.apache.org/)."

   Alternately, this acknowledgment may appear in the software itself, if and wherever such third-party acknowledgments normally appear.
4. The names “Xerces” and “Apache Software Foundation” must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact apache\@apache.org.
5. Products derived from this software may not be called "Apache", nor may "Apache" appear in their name, without prior written permission of the Apache Software Foundation.
6. THIS SOFTWARE IS PROVIDED ``AS IS'' AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE APACHE SOFTWARE FOUNDATION OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

   ==

   This software consists of voluntary contributions made by many individuals on behalf of the Apache Software Foundation, and was originally based on software copyright (c) 1999, International Business Machines, Inc., http://www.ibm.com. For more information on the Apache Software Foundation, please see <http://www.apache.org/>.

GNU General Public License

The GNU General Public License covers the following software:

- Cygwin. To view the Cygwin source code, refer to http://cygwin.com.
- Readline. To view the Readline source code, refer to http://cnswww.cns.cwru.edu/~chet/readline/rltop.html.
- BASH. To view the BASH source code, refer to http://www.gnu.org/directory/devel/shell/bash.html.
- Taylor UUCP. To view the Taylor UUCP source code, refer to http://www.airs.com/ian/uucp.html.
- gzip. To view the gzip source code, refer to http://www.gzip.org.

- Tar. To view the Tar source code, refer to http://www.cygwin.com.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

675 Mass Ave, Cambridge, MA 02139, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

1. You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
2. You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
3. If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

1. Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
2. Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete

machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

3. Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License.

However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein.

You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in

reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

IMPAX 6.4

Copyright (C) 2007

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

Sun Microsystems

Sun, Sun Microsystems, the Sun Logo, and Solaris are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and other countries.

Oracle Corporation

Oracle is a registered trademark of Oracle Corporation and/or its affiliates.

The ICC Software License, Version 0.1

This product includes software developed by the The International Color Consortium (www.color.org).

Flexgrid for .NET

Portions Copyright © ComponentOne, LLC 1991-2002. All Rights Reserved.

Log4Net

This product includes software developed by The Apache Software Foundation (http://www.apache.org/). Please read the LICENSE files present in the Help > About dialog of the IMPAX Client.

Zlib

zlib.h -- interface of the 'zlib' general purpose compression library Version 1.2.1, November 17th, 2003

Copyright (C) 1995-2003 Jean-loup Gailly and Mark Adler

This software is provided “as-is”, without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Glossary

A

Administration Tools

Administration Tools control the configuration and management of the entire IMPAX cluster. The Administration Tools are a Java-based application that run in a web browser.

APIP

Agfa PACS Interface Protocol.

archive

A physical device for long-term storage and retrieval, such as DVD-R or DLT. An archive can be set up in a jukebox or non-jukebox configuration. The archive is attached to the Archive Server.

Autopilot

Service that removes old and expired data when the cache starts to get full. This maintenance function keeps the database to a manageable size.

B

back up

The activity of copying a database so that it will be preserved in case of a software or hardware failure.

browser

Software that allows a user to search through information on a server. The term usually refers to a universal client application, such as Firefox or MS Internet Explorer, that interprets HTML documents.

C

cache

Temporary storage area for data on a computer's local or external hard drives.

cc objects

Change Context (cc) objects are DICOM objects used to communicate and synchronize study metadata changes across multiple IMPAX clusters.

compression

Reduces the size of a file to save both file space and transmission time. Lossless, lossy, and wavelet are examples of compression types.

Curator

Curator is responsible for compressing incoming images into the Mitra Wavelet format and storing them in the web cache. These studies can be accessed by remote or local clients. Multiple instances of Curator can be supported. If more than one Curator is installed, the first Curator instance that is started is considered the master Curator.

D

database

A collection of data that is organized so that its contents can easily be accessed, managed, and updated.

DICOM

Digital Imaging and Communications in Medicine. The standard communication protocol used by a PACS, HIS, or modality to

exchange information or images with other systems.

H

high availability

With a high-availability solution, a site is protected against system downtimes, either planned or unplanned. Redundant servers are put in place that can take over functionality should the primary server become unavailable.

HIS

Hospital Information System. The database used by a hospital to manage patient information and scheduling.

HIS verification

An option that forces the PACS to verify all incoming images from an acquisition station or modality against specific criteria, such as the patient ID and accession number. The PACS sends a message through the RIS Gateway to verify the criteria against what is contained in the HIS. If the criteria match, then the images can be stored permanently.

HSM

Hierarchical Storage Management. An HSM archive system provides long-term storage of data and access to data. Studies archived with HSM are stored to a file system. A mount point and subdirectory to store studies to is specified. The HSM system takes care of storing the data.

http

Hypertext transfer protocol, a TCP-based protocol for transferring hypertext requests and information between servers and browsers.

https

Hypertext transfer protocol, secure, a URLaccess method for connecting to http servers using SSL (secure sockets layer).

I

IP address

The Internet Protocol address is a numeric address that identifies the station to other TCP/IP devices on the network.

J

jukebox archive

An archive with one or more drives where media is loaded, with multiple slots that hold the media for easy storage retrieval, and with a robotic changer to move media around within the jukebox.

L

log file

A file or set of files containing a record of the actions and modifications made in an application. Service teams use log files during setup and configuration of the system or its components. Logs are also used to diagnose problems. Logging can typically be set to record varying levels of detail.

M

master Curator

When using multiple Curators, the first Curator that runs, which owns the job queue.

Microsoft Data Access Components (MDAC)

Microsoft's umbrella term for their ActiveX Data Objects (ADO), OLE DB, and Open Database Connectivity (ODBC) libraries. Together, these provide access to a variety of data sources, both relational (SQL) and non-relational. MDAC is the technology that supports Universal Data Access, Microsoft's strategy for providing access to information across the enterprise.

mirroring

Creating backup copies of all clinical data so that damaged data can be recovered if the original is lost.

modality

An imaging discipline, such as CT, or a device that gathers digital information, such as digitizers for X-ray film, MRI scanners, and CR devices.

MVF

Name of the IMPAX Server database.

N

Network Gateway

The Network Gateway is part of the IMPAX cluster and may be housed on its own computer or may share the same computer as the Archive and Database Servers. Essentially this is the workflow manager of the IMPAX system. The Network Gateway controls the studies coming into the cluster from an acquisition station, validates these incoming studies against information from the HIS or RIS, and routes the validated studies to cache or archive.

non-jukebox archive

Functions much like a jukebox archive, except that it has no mailslots or changer. In a non-jukebox archive configuration, a volume is considered to be offline when it leaves the drive, whereas in a jukebox configuration, the volume is considered offline when it leaves the jukebox—either via a mailslot or by manually reaching in the case and retrieving the volume.

O

OCR

Optical Character Recognition is the recognition of printed or written characters by a computer. If a modality generates images into the system but not enough information about a study is sent, OCR templates read information directly from the burned demographics.

P

PAP

PACS Archive Provider. A PACS Archive Provider (PAP) acts like a Service Class Provider (SCP) in that it receives studies. However, it differs from an SCP in that the PAP can automatically register a study as PACS archived if the study originates from a source that the PACS stores to and remembers from, without having to queue the study for archiving back to the source. The PAP can also parse the private tags of the incoming DICOM objects to determine HIS verification and study status.

permissions

Permissions define the available IMPAX features and types of studies that users in a particular role have access to. Permissions are made up of a set of operations.

PSARMT

PACS Store and Remember Migration Tool. This tool enables a site to migrate from an external PACS system to IMPAX by allowing the external system to act as an archive server to IMPAX.

S

SCP

Service Class Provider. A DICOM server that receives requests from an SCU. The DICOM SCP accepts images for processing, processes find and retrieve requests, and handles storage commitment requests and replies.

SCU

Service Class User. Primarily sends DICOM requests to an SCP.

T

tx objects

Transaction (tx) objects are DICOM objects used to communicate and synchronize study status changes across multiple IMPAX clusters.

U

user

Users represent individuals, such as a radiologist or a clinician. Each user must belong to at least one primary role. A user can also belong to other secondary roles. Users inherit

permissions, licenses, and preferences from their role.

V

volume

A volume refers to the division of data on the media. For example, if a tape has two sides, each side is referred to as a separate volume.

W

wizard

Wizards are used to automate processes. Wizards perform a predetermined sequence of actions after they are selected and applied.

Index

.NET
    installing Framework 52

A

accounts
    Client administration 55
ADAM
    administrators 67
    ADSI 67
    backing up 41
    upgrading data 43
adding
    SQL Server entry 36
Administration Tools 55
    installing package 24
administrators
    ADAM 67
ADSI Edit 67
AgfaService user
    creating account 23
antivirus software
    starting 54
    stopping 13
    troubleshooting 66
Application Servers
    canceling upgrade 66
    entering name of 52
    testing installation 55
    upgrading 41, 43, 44
archive
    clearing Logical Volume 14
Archive Server
    installing AS300 packages 37
    upgrading 35
archiving studies 11, 12
    restarting queues 55
AS300 packages 22
    recording 22, 35
    uninstalling 23, 36, 47
    upgrading 26
Audit Record Repository
    configuring database connection 47
authentication 52

B

backing out
    of upgrade 66
backing up
    ADAM database 41
    upgraded database 33
browsers
    upgrading 16
Business Services
    configurations, applying 43

C

cache check and repair tools 62, 69
    installing 60
    running 61, 62
caches
    correcting corruption 61, 62
    installing package 24
cc conflict jobs
    disabling 49
cc objects 25
CD exporting 48
cdexport package installation 25
Change Accepter
    disabling cc conflicts 49
changing
    default database 36
    SQL Server password 51
choosing
    See selecting
Clients
    Client Knowledge Base 45
    installation of 52
    testing installation 55
    troubleshooting 66

uninstalling software 51
upgrading 41
clocks
synchronizing 57, 58, 59, 60
closing
archive volume 12
comparing
snapshots 57
compressor package installation 25
configuring caches 48
connecting
Audit Record Repository to database ... 47
components to database 36
Connectivity Manager
starting queues 56
stopping queues 10
copyright information 2
Core package installation 24
corrupt files 61, 62
CREATE_CC_CONFLICT_JOB
disabling 49
creating
ADAM database backup 41
report files 10, 56
Cross-Cluster Dictation Interlock tool
running 9
uninstalling 64
Curator 25, 48
upgrading 41, 47

D

database
backing up ADAM 41
configuring Audit Record Repository connection 47
configuring connection 36
correcting cache corruption 61, 62, 63
installing SQL Server 2005 SP2 20
marking studies as PACS archived 61
restoring 33
upgrading 15, 16, 31, 43
upgrading to SQL Server 2005 ..... 17, 18
verifying upgrade 17, 32
Database Server
testing installation 55
upgrading 15, 26, 31
Data Guard 26
default packages 37
deleting
database file locations 61
log files 14
Logical Volume 14
deregister mode
cache check tool 61
dictating
avoiding conflicts 9
directories
cache check 61, 62
See also folders
disabling
antivirus software 13
cc conflict jobs 49
DICOM checking 61, 62
tx object creation 50
documentation
installing IMPAX 45
related 3
uninstalling IMPAX 6.2 42
uninstalling IMPAX 6.3 43
warranty statement 2
domain
time synchronization 60
dot NET Framework 52
duplicate files 61, 62

E

emptying queues 13
external PACS 60
external time source
synchronizing to 58

F

finding
ADAM schema master 68
administrator 67
files unknown to database 61, 62
fixing demographic information 11
folders
IMPAX Client 52

G

generating
portable password file 29, 34
guides
installing 45

H

halting
archive queues 13

hardened IMPAX system 57
Healthcheck 46
HIS verification 11
Hotfix, .NET Framework 52
HSM archives
installing package 25

I

IE
See Internet Explorer
images
lost 61
importing
password file 37
internal time source
synchronizing to 59
Internet Explorer
upgrading 16
inventory of migration 10, 56

J

jdvd package installation 25
jobs
expediting 13
monitoring 10
jukebox archives
installing Veritas Px Engine 37

K

Knowledge Bases
installing IMPAX 45
uninstalling IMPAX 42
uninstalling IMPAX 6.2 42
uninstalling IMPAX 6.3 43

L

licenses
installing with packages 37
local Clients 51
logging 14
cache check information 61, 62
database upgrade 17, 32, 43
installation activity 26
logging in
authentication options 52
Logical Volume, clearing 14
lost images 61, 63

M

manufacturer's responsibility 2
marking
studies as PACS archived 61
marking mode
cache check tool 61, 62
master Curator
upgrading 47
McAfee software 66
MDAC
installing 52
migration paths 8
Migration Tools
database-upgrade-script 16, 31
migration_inventory 10, 56
uninstalling 64
mirroring
archive volume 12
mmc snap-in 68
monitoring
queues 10
moving
files out of cache 61, 63
images 63
MVF
packages, installing 24
mvf-check-cache 69
mvf-clean-cache 69
mvf-ddo-rescue 70
mvf-report-loss 70

N

names
Application Servers 52
current AS300 server 32
database 36
Network Gateway 24
installing AS300 packages 37
upgrading 35
non-DICOM files 61, 62

O

OCR package 9, 24
ODBC
configuring connection 36
operating system 15
optional packages 37
Oracle
Data Guard 26

upgrading Client 41

P

packages, AS300
installing on Archive Server or Network Gateway 37
recording 22, 35
uninstalling 23, 36, 47
upgrading 26
PACS Archive Provider
See PAP
PACS Store and Remember archives 40
running PSARMT 61
PAP
installing and configuring 40
installing package 26
passwords
AgfaService account 23
Client administration 55
database 36
importing file 37
portable, generating 29, 34
sa account 18
SQL Server 51
platform
See operating system
portable password file
See passwords
post-migration system snapshot 56, 57
post-migration tasks 55
prerequisites 8
primary volume
closing 12
PSARMT
installing 60
running 61

Q

querying
database 12
queues
Connectivity Manager 10, 56
emptying 13
restarting 55
stopping 10, 13

R

recording
AS300 software packages 22, 35
registering
SQL Server 30, 34
registry entries 22
remote Client 51
remote PACS 60
removing
Application Server software 66
Client software 51
Cross-Cluster Dictation Interlock tool .. 64
damaged caches 61
IMPAX 6.2 documentation 42
IMPAX 6.3 documentation 43
IMPAX AS300 packages 23, 36, 47
IMPAX documentation 42
IMPAX Migration Tools 64
log files 14
PSARMT tools 61
replacing
servers 31
reports
avoiding dictation conflicts 9
lost images 61, 63
migration inventory 10, 56
source 16, 31
restarting
antivirus software 54
archive queues 55
queues 56
restoring
database 33
leftover files 61

S

Scavenger
installing package 25
scdr package installation 25
schema
migration 16, 31
Schema Master ADAM instance 68
scripts
mvf-clean-cache 69
mvf-ddo-rescue 70
security
hardening policy 57
passwords 29, 34, 51
selecting
database server name 36
time server 57, 59, 60
sending
jobs 10
server

supported migration paths 8
Service Pack
.NET Framework 52
See SP
services
stopping SQL Server 20
Study Status Relay 64
setting up
See configuring
site migration 8
slave Curators 47
Snap-in 68
snapshot of system 10, 56, 57
SP2
SQL Server 20
Windows 2003 15
SQL Server
backing up database 32
configuring the connection 36
installing package 24
installing SP2 20
registration, updating 30, 34
restoring database 33
stopping services 20
upgrading to 2005 ..... 17, 18
starting
antivirus software 54
Connectivity Manager queues 56
PSARMT services 61
status of upgrade 17, 32
status of web services 46
stopping
antivirus software 13
archive queues 13
Connectivity Manager queues 10
SQL Server services 20
transmit queues 10
storing
studies to archive 11
synchronizing
server clocks 57, 58, 59, 60
SystemInfo.log file 26
system snapshot 10, 56

T

testing
connections 36
installed software 55
times
server synchronization 57, 58, 59, 60
tools, Migration
database-upgrade-script 16, 31
migration_inventory 56
uninstalling 64
trademark credits 2
Transaction objects
disabling 50
transmit queues, stopping 10
troubleshooting 66
tx objects
disabling 50

U

uninstalling
AS300 software packages 23, 36, 47
Client software 51
Cross-Cluster Dictation Interlock tool .. 64
IMPAX 6.2 documentation 42
IMPAX 6.3 documentation 43
IMPAX documentation 42
IMPAX Migration Tools 64
unknown files 61, 62
unverified studies 11
updating
Curator defaults 48
database records 61
SQL Server registration 30, 34
upgrade problems 17, 32
User Guide
See Knowledge Bases
users
ADAM administrators 67
AgfaService 23
mvf 33, 36

V

VaultAgfa package installation 24
verifying
server upgrade 17, 32
volumes
closing 12

W

warranty statement 2
web services
Healthcheck 46
status 46
Windows
synchronizing to external time source 58

synchronizing to internal time source .. 59
Time Service, configuring 57, 59, 60
upgrading browser 16
upgrading Windows 2003 15
Windows authentication 52